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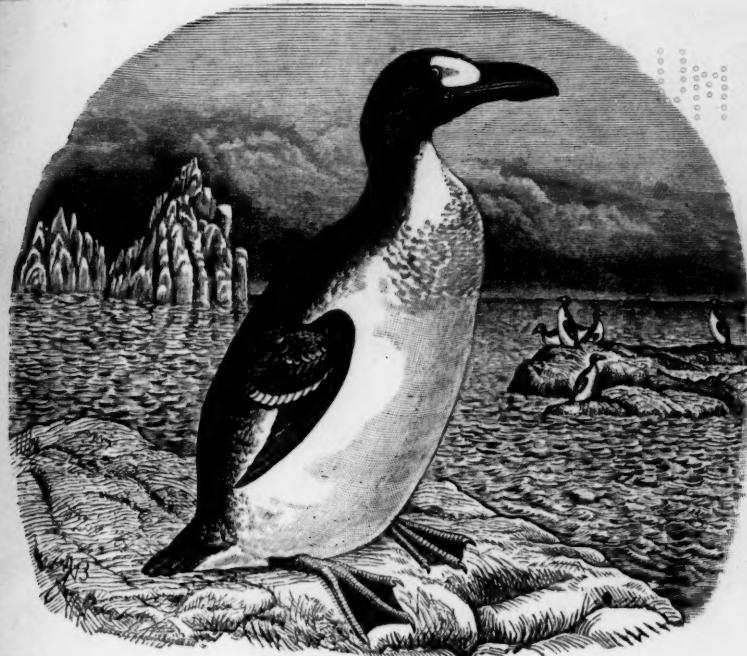
A Quarterly Journal of Ornithology

EDITOR,

J. A. ALLEN

ASSOCIATE EDITORS,

ELLIOTT COUES, ROBERT RIDGWAY, WILLIAM BREWSTER,
AND MONTAGUE CHAMBERLAIN



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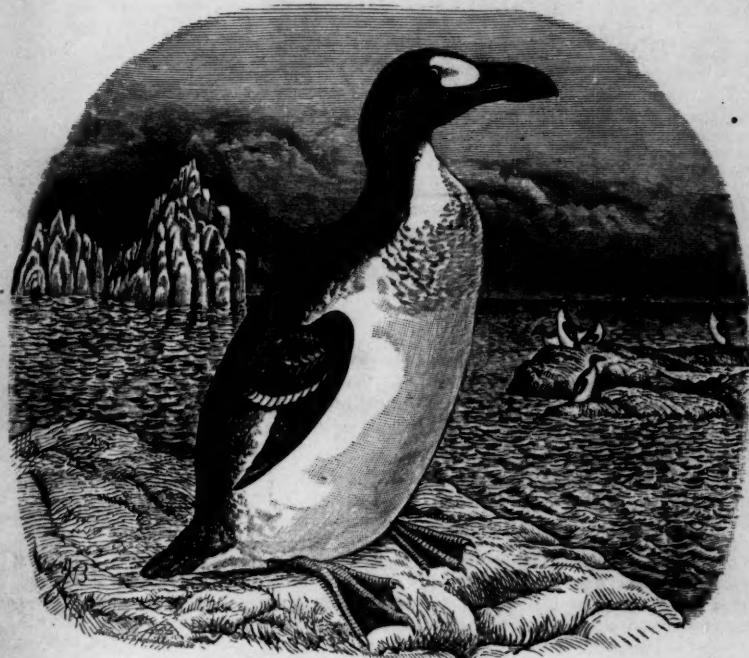
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VOL. IV.

JANUARY, 1887.

No. I.

NOTES OF A BIRD CATCHER.

BY FREDERIC A. LUCAS.

AMONG the few pastimes of those who "go down to the sea in ships" and "do business in [the] great waters" of the southern hemisphere is that of fishing for the sea birds that abound in the vicinity of Cape Horn and the Cape of Good Hope. The birds that will take a hook are limited to a few species of Albatrosses and Petrels, some, like the Whale Bird (*Prion turtur*), which are extremely abundant, keeping at a respectful distance, while others, like the Giant Skua, steadily refuse to take a bait under any circumstances. First and foremost is the Wandering Albatross (*Diomedea exulans*), whose great size and cautious behavior makes his capture the crowning triumph of the avian angler. It is commonly stated that the Albatross takes a bait readily, but although this may have formerly been true, it is now a very misleading statement. The Albatross has undoubtedly learned wisdom by experience, and just as the grizzly bear is said by Mr. Roosevelt to have become more timid since the introduction of improved rifles, so, year by year, the Albatross has grown more and more distrustful of anything with a line attached to it. During four voyages I found that only the younger birds could be caught easily, those of the first year the most readily, those of the second less so, the difficulty increasing regularly with age. Like all other sea birds, Albatrosses can be most easily enticed into biting during tempestuous weather when, having been

prevented for days from procuring their regular amount of food, the pangs of hunger overcome their natural distrust.

The Albatross has a deliberate way that accords well with his ample proportions and grave countenance, and when a bait is spied does not hasten to plant himself beside it like a greedy little Cape Pigeon, but usually takes a contemplative turn before settling down for a thorough inspection of the tempting dainty. If the investigation proves satisfactory he may condescend to bite, but it not infrequently happens that by the time this conclusion is arrived at the end of the line is reached also, and the morsel of fat pork is suddenly snatched away leaving the bird looking about him with a much aggrieved and puzzled expression. There the Albatross will often sit for five minutes before rising to follow the departing vessel, possibly to go through with precisely the same performance. Should he, however, be hooked, the spirit of opposition is aroused within him, and sitting upright, with big webbed feet thrust firmly forward, the Albatross beats the water vigorously with his wings, or holds them stiffly extended in an effort to free himself from the hook by mere dead weight.

The strain of such a bird pulling at the end of a hundred and fifty feet of line is considerable; but so long as he pursues these tactics his capture is pretty well assured. For the Albatross is not 'hooked' in the ordinary sense of the word, but is simply held by the hook catching in the curved bill. So long, therefore, as the strain on the line is steady, so long will the hook hold; once slackened, it drops by its own weight, and if, as sometimes happens, the bird flies towards the ship he is soon free.

Like the majority of sea birds, the Albatross cannot rise from a vessel's deck, but waddles about as helpless as if wing-clipped. As regards size, the largest of four measured by me—a two year old bird—was 10' 4" in extent and weighed about fourteen pounds. I have known one to weigh eighteen pounds, and have been told of specimens which actually measured 12, 13, and 15 feet from tip to tip. Is it not possible that it requires as many years for this bird to attain its full size as to put on the adult plumage? Certain it is that the largest specimens are the whitest and most wary. And I would suggest that melanistic examples of *Diomedea exulans* may not be infrequent, for twice on one voyage large, dark colored birds were observed which, from their size,

could have been no other than this species. These were not young of the year but sooty colored, like a vastly exaggerated Giant Fulmar. Unfortunately I did not improve my opportunities to observe the food of the Albatross, but the stomachs of two that were opened contained partially digested fragments of cuttlefish (?) and a small quantity of feathers.

They have been seen to devour the castaway body of a companion that had been caught and skinned, and to tear up and eat a large ling (*Haloporphyrus*). Doubtless anything that can be eaten does not come amiss.

The farthest north I have any personal record of seeing the Wandering Albatross is 30° S., 24° W.

The Molly-Hawk, or Molly-Mawk (*Diomedea melanophrys*), and the Goney (*D. culminata*) are more easily taken than their larger relative, but the Sooty Albatross (*Phæbetria fuliginosa*) —in the ordinary track of vessels at least—is wary in the extreme, and, although it will approach so near that the eye is distinctly visible, steadily refuses to even look at a bait. *Diomedea melanophrys* was seen occasionally in the harbor of Valparaiso.

Most knowing of all Petrels is the Cape Hen, or Giant Fulmar (*Ossifraga gigantea*). If a loose piece of fat pork was thrown out, it was immediately snatched up, but even during heavy gales it was quite impossible for me to coax one to touch a piece with hook and line attached. Where the tempting morsel was large the Cape Hen would indeed swoop towards it as if about to alight, but caution invariably got the better of appetite, and I am ready to take oath that these birds actually winked as they sailed by. In its movements, and especially when alighting, the Giant Fulmar has an uncouth, angular look about it that is very amusing. The species not uncommonly ranges as far north as 12° south latitude, for several were seen and two shot at the Chincha Islands during the month of November. One perfect albino was seen, presenting a strange contrast to the others by which it was accompanied.

Majaqueus æquinoctialis is apparently not common off Cape Horn and of the few seen fewer still could be induced to take a hook. Those that did so invariably escaped by reversing the tactics of the Albatross and flying towards the ship instead of indulging in worse than useless opposition. It being simply

impossible to pull in line as fast as a bird could fly, the hook always dropped from the bird's beak.

The Southern Fulmar (*Fulmarus glacialisoides*) is not uncommon off Cape Horn, and is readily taken. It bites freely, and fights well when captured, scratching, flapping, and biting in a very vigorous manner. The quarrelsome disposition of this bird at times becomes a drawback to his capture, for a Fulmar will frequently devote his time and energies to driving away the Cape Pigeons sooner than to take the bait himself.

Thalassoica antarctica is about as common, or uncommon, as the preceding species, and is also comparatively easy to capture. As a rule both these species keep farther from ships than the abundant and tame Cape Pigeon (*Daption capensis*). Of the species herein noted, *Thalassoica antarctica* appears to be the most exclusively southern in its range. Going southwards *Daption* made its appearance May 16, *Fulmarus* May 20, and *Thalassoica* not until June 21.

The well known Cape Pigeon (*Daption capensis*) is usually met with in the Atlantic near latitude 35° S., or "off the River 'Plate,'" as it is termed in the vernacular. On the Pacific coast it seems to range much farther north, for in July we left them outside the harbor of Valparaiso, and in September they were common in latitude 11° south. Captain Carey, of the ship 'Calhoun,' informed me that a few followed that vessel nearly to Acapulco, 16° N.

The Cape Pigeons are always hungry and it is an easy matter to take any desired number of them. Ordinarily they are set free after a short detention, but occasionally they are killed, and after parboiling made into a pot pie. Concerning the flavor thereof I cannot now speak positively, as it has been many years since my last taste of Cape Pigeon pie. This species has an extremely disagreeable habit, shared by many of its relatives, of vomiting up when captured a thick, oily, and ill-smelling liquid, so that it is necessary to handle this bird with some caution.

The Cape Pigeon *can* dive although it very rarely does so, usually gathering its food from the surface of the water. Once or twice I have noticed them dipping up the water as if drinking, but this may not have been the case.

Like the other Petrels, but to a still greater extent, the Cape Pigeons delight in assembling around the contents of the cook's swill pail. If there be nothing but dish-water, sufficient only to

make a smooth, oily spot, down will go every bird near, and there they will sit for five, or even ten minutes gazing at one another and apparently waiting, like Micawber, for something to turn up. My note book says that in February, going east, we saw no Cape Pigeons, the Petrels seen then being probably *Æstrelata*, which, although following in our wake, kept at a considerable distance.

Last and least (in size at all events) is the busy Mother Carey's Chicken, never at rest but perpetually fluttering over the water, ever and anon pattering over the surface yet not even alighting to feed.

Once, and only once, did I observe these little birds take a bait, and that was when a heavy gale of several days' duration had apparently rendered them perfectly ravenous. *

The following method can be vouched for as very successful in capturing the Stormy Petrels. To one end of a spool of stout, black thread fasten a bit of wood just large enough to make a drag that will keep the thread taut when towed behind a vessel. To this attach at intervals of from four to six feet threads with a small hook or bent pin at the end, graduating the length according to the distance they will be from the drag. These will hang from the main thread like droppers from a leader and the little Petrels flying to and fro in the vessel's wake will sooner or later strike some of the threads and become entangled.

A few words in conclusion on the question as to whether or not the birds seen in a ship's wake are the same day after day. It seems to me that Capt. Hutton is correct in his opinion that while they *may* be it is doubtful if they are. In exceptional cases, as, for example, the birds which followed the ship 'Calhoun' nearly to Acapulco, it would appear that the birds were undoubtedly a small flock enticed beyond their usual range. Personally, I can see no objection to the theory that the Albatross and other birds can fly for several days in succession without rest, the more that their easy sailing flight requires the minimum of exertion. Moreover, I have on moonlight nights occasionally observed birds circling around the ship, and on two occasions birds were picked up on deck between 4 and 8 A. M. One of these was a small *Puffinus*, the other an *Oceanodroma*(?). I

* This has been my own experience with these little birds, but Col. Goss tells me that on the Grand Banks they will bite eagerly at a hook baited with a bit of cod liver.

do see serious objections to the theory that sea birds regularly rest upon the water at night, in the long and heavy gales so prevalent off Cape Horn, which would seem to make such a proceeding a physical impossibility. And how is it with the little Stormy Petrels which have apparently a constitutional aversion to sitting in the water?

It is doubtful if the Albatross habitually follows any one vessel for a considerable length of time, while the reverse is probably true of the Cape Pigeon. While the amount of 'pickings' from a single ship would make quite an item in the daily fare of several Cape Pigeons, they would count for little with one Albatross. This latter bird is much given to making vast stretches back and forth over the ocean, and even while near a ship continually circles round about in search of food. That an Albatross *can* see a vessel distinctly from an elevation of a thousand feet is doubtless true, but judging from my own experience this bird rarely ascends to such a height, for I *never* observed it more than two or three hundred feet above the ocean. Is it not more probable that the bird meets with vessels while quartering over the ground as just described and stays by them until drawn off in search of food? Contrary to what might be supposed, it is during calms that birds become detached from the ship they may have been following. At such times the Albatross is especially given to resting upon the water, from which it cannot then rise without much flapping of wings and splashing of water as it runs along the surface until it has acquired the necessary momentum to start upon its customary graceful flight. The smaller birds follow the example of their larger relatives, and, scattered here and there by twos and threes, alternately quarrel and preen their plumage until the breeze springs up, and with it everything once more starts into renewed activity.

A NEW VIREO FROM GRAND CAYMAN, WEST INDIES.

BY CHARLES B. CORY.

THE box of birds lately received from Grand Cayman, or Great Cayman, contained still another new bird from that most interesting island, which I propose to call

Vireo caymanensis, sp. nov.

SP. CHAR.—(♂ Coll. C. B. Cory, No. 6273.) Upper parts dull olive, brightest on the rump and upper tail-coverts; crown darker than the back, showing a slight brownish tinge; underparts dull yellowish-white, faintly tinged with olive on the sides and flanks; upper throat dull white; a dull white superciliary stripe from the upper mandible; a stripe of slaty brown from the upper mandible passing through and back of the eye; quills dark brown, narrowly edged with dull green on the outer webs, most of the inner feathers showing a white edging on the basal portion of the inner webs; tail dull olive brown, the feathers showing green on the edges; upper mandible dark; lower mandible pale; feet slaty brown.

Length, 5.40; wing, 2.75; tail, 2.25; tarsus, .75; bill, .52.

HABITAT. Island of Grand Cayman, West Indies.

Several specimens of *Seiurus noveboracensis* were received from Grand Cayman, having been taken there in August. A few birds were also sent from Little Cayman; they were *Polioptila cærulea* (Linn.), *Dendroica dominica* (Linn.), *Vireo calidris barbatulus* (Cab.), *Euetheia olivacea* (Gmel.), *Elainea martinica?* (Linn.), *Tyrannus dominicensis* (Gmel.), and a *Zeniada*. The latter appears to be somewhat different from *Z. spadicea*, but a larger series is necessary to determine if the comparatively slight differences are constant. It is of a somewhat paler brown, and shows a decided slaty tinge on the flanks; the metallic reflections on the feathers of the neck appear different in color, being paler and less in extent. It is possible that the two birds are not separable specifically, but in case future investigation should prove them to be distinct I would propose the name of *Zenaida richardsoni* for the Little Cayman bird.

ADDITIONS TO THE CATALOGUE OF THE BIRDS OF KANSAS.

BY N. S. GOSS.

THE following observations have been made, and notes gathered, since the publication, May 1, 1886, of my 'Revised Catalogue of the Birds of Kansas':

Podilymbus podiceps (*Linn.*). PIED-BILLED GREBE.—June 8, 1886, I found these birds breeding in a pond in Meade County. I shot a young bird about two-thirds grown and saw several others, and caught a glimpse, in the rushes, of an old bird followed by little chicks, not more than a day or two old.

Phalaropus tricolor (*Vieill.*). WILSON'S PHALAROPE.—June 8, 1886, I found three pairs of these birds breeding on marshy ground, bordering a slough or pond of Crooked Creek, Meade County, and I therefore enter the species as an occasional summer resident in Western Kansas; quite common throughout the State during migration. Nest on the ground, usually on hummocks, quite deeply excavated, and lined with leaves from the old dead grasses; eggs, three or four—usually four; ground color, cream to ashy drab, rather thickly but irregularly blotched with varying shades of brown to black. The female is larger and brighter in color than the male, but from limited observations of the birds I am led to think certain writers are mistaken in reporting that the females arrive first and do all the courting, but leave the work of nest-making, incubation, and the rearing of the young to the males. I have never been so fortunate as to find either of the birds upon the nest; but certainly, both appear equally watchful and solicitous, circling around and croaking as one approaches their nests, or near their young (grayish little fellows that leave the nest as soon as hatched). The earliest arrival noticed in the State was at Neosho Falls, April 29, 1879. In this flock, as in all others seen at or about the time of their arrival, the sexes appeared to be about equally divided, and I am inclined to think further examination will prove the birds to be joint workers in the hatching and rearing of their young. With a view to removing all doubts, I trust all naturalists who are so fortunate as to be upon their breeding grounds during the breeding season will carefully note and report their observations.

Ægialitis nivosa (*Cass.*). SNOWY PLOVER.—Summer resident on the salt plains along the Cimarron River, in the Indian Territory, the northern limits of which extend across the line into southwestern Comanche County, Kansas. Quite common; arrives about the first of May; begins laying the last of May. Nest, a depression worked out in the sand; eggs, three, $1.20 \times .90$, pale olive drab, approaching a light clay color, with a greenish tint, rather evenly and thickly marked with irregularly-shaped

ragged-edged splashes and dots of dark or blackish brown. (See Auk, III, 1886, p. 409.)

Colinus virginianus texanus (*Lawr.*). **TEXAN BOB-WHITE.**—This bird is entered in the A. O. U. 'Check-List' as "Hab. Southern and Western Texas, north to Western Kansas." On receipt of the 'List', I wrote to Mr. Robert Ridgway, a member of the committee that prepared the list, to know when and where in the western part of the State the birds had been taken. In reply he says: "*Colinus virginianus texanus*, as a bird of Kansas, rests on two specimens, adult females, in the National Museum, labelled, respectively, No. 34425, Republican Fork, May 27, 1864, Dr. Elliott Coues, U. S. A.; and No. 34425, same locality, date, and collector. (See Hist. N. Am. B., III, p. 474.) These specimens agree exactly with typical examples of *texanus* as compared with *virginianus* proper." Since the early settlement of the State I have known through report of military men and hunters that Bob-whites were occasionally seen on the Cimarron River. I never met with them there, and had taken it for granted that they were *C. virginianus*; but as the birds were found in Western Kansas long before our Bob-whites, in following up the settlements, reached the central portion of the State, I am now inclined to think further examination may prove the western bird of the plains to be variety *texanus*, and that they reached that portion of the country by following north on the old military trails. I have written to several persons in that region for specimens, but as yet have no reply.

Empidonax pusillus traillii (*Aud.*). **TRAILL'S FLY-CATCHER.**—Mr. George F. Brenninger, Beattie, Marshall County, has kindly sent me for examination a nest containing three eggs, taken July 17, 1886, in a thick second growth of timber, on the bank of a small creek at Beattie, and writes that he found in the same vicinity quite a number of nests. The earliest found, with a full set of eggs, was June 14. In the Goss Ornithological Collection is a female which I shot at Neosho Falls, July 26, 1881, and I have occasionally noticed the birds during the summer months, and have no doubt but they will prove to be quite a common summer resident. I congratulate Mr. Brenninger on the find, and thank him for calling my attention to it. The nests are usually placed in upright forks of the small limbs of trees and bushes, from four to ten feet from the ground. A rather deep

cup-shaped nest, closely resembling in form and make-up the nest of *Dendroica aestiva*. Composed chiefly of small stems or twigs from plants, and flaxen fibrous stripings from the same, with a few scattering blades of grass, and here and there an occasional feather, and lined thickly and rather evenly with fine hair-like stems from grasses; eggs, three and four. Dimensions of the three eggs sent, .70 X .55, .70 X .55, .69 X .55; and of a set of four eggs taken June 17, 1881, at Galesburg, Illinois, .72 X .55, .72 X .55, .72 X .54, .70 X .54; color, cream white thinly spotted and speckled with reddish brown, thickest around large end.

Spizella monticola ochracea Brewst. WESTERN TREE SPARROW.—Mr. William Brewster, in "Notes on some Birds collected by Capt. Charles Bendire, at Fort Walla Walla, Washington Territory" (Bull. Nutt. Orn. Club, Vol. VII, Oct. 1882, p. 225), under the head of "species and varieties calling for special consideration" (p. 228), gives a full description of this form from a careful examination and comparison of the Fort Walla Walla specimens with specimens of the typical eastern bird, deciding that the differences in coloration and markings were sufficient to rank it as a variety of *S. monticola*, and naming the bird the Western Tree Sparrow, *S. monticola ochracea*. He gives its habitat as "Western North America, east to Dakota, north to Arctic Ocean; Alaska." At Wallace, on the 14th of October, 1883, I shot several Tree Sparrows, and thought at the time that they were somewhat paler in color and different from specimens I had taken in the eastern part of the State; but on comparison I reached the conclusion that they were the young birds of the year, and gave the matter no further thought until I noticed the bird entered in the A. O. U. 'Check-List' as occurring in "Western Kansas." I at once wrote to Mr. Brewster for typical specimens of both this and the eastern bird, which I received through his friend, Mr. Arthur P. Chadbourne, of Cambridge, Massachusetts. Just before receiving the specimens, I killed (October 25, 1886), three of the birds in Cheyenne County (north-west corner of the State). I now find, on comparing the specimens, that all the western birds, and a female in the Goss Ornithological Collection, taken November 22, 1878, at Neosho Falls, are in every respect similar in color to Mr. Chadbourne's specimen, labelled *S. monticola ochracea*, Ellis, Kansas, January,

1886. The specimens examined from Eastern Kansas are nearly all the true *S. monticola*, the coloration being fully as rich and deep as that of the eastern specimen taken in Middlesex County, Massachusetts, December 1, 1882. I therefore enter the Western Tree Sparrow as a winter resident; abundant in Middle and Western Kansas, and not uncommon in the eastern portion of the State. The western specimens, however, that I have examined, were all captured in the fall or early winter, and I should be led to think it possible upon further examination, especially of the birds in their spring plumage, might prove the paler form to be the immature winter dress, were it not for the fact that Mr. Brewster, in making his examination, had before him not only his own large collection, but that in the National Museum, which must have embraced specimens taken at different seasons of the year.

Turdus ustulatus swainsonii (Cab.). OLIVE-BACKED THRUSH.—June 6, 1886, I saw several of these birds in the timber skirting Crooked Creek, in the northern part of Meade County. They were probably migrants, but the date is so late in the season that I think it worthy of mention.

LIST OF THE MIDSUMMER BIRDS OF THE KOWAK RIVER, NORTHERN ALASKA.

BY CHARLES H. TOWNSEND.

As my 'Notes on the Natural History of Northern Alaska,' forming part of the 'Report of the Arctic Cruise of the U. S. Revenue Steamer Corwin,' recently ordered to be published by Congress, will probably be several months in the hands of the Public Printer, a list of the birds I found in those high latitudes may be acceptable to the readers of 'The Auk.'

The Kowak was explored by a party sent out from the 'Corwin,' in 1885, in charge of Lieut. J. C. Cantwell, consisting of Lieut. Cantwell, myself, two seaman, and several Eskimo guides. We were on the river from the first of July until the last of August, and were the first white men to reach the head-

waters, which we discovered at a distance of probably more than five hundred miles from the sea.

This river flows into the Arctic Ocean at Kotzebue Sound, through a delta forty miles broad, and throughout its course lies entirely within the Arctic Circle.

In the interior the country is wooded and mountainous, and the lower course of the river is through rolling tundra lands.

The list is restricted to the species actually obtained or seen in the region.

1. *Urinator adamsii* (*Gray*). Common.
2. *Urinator lumme* (*Gunn.*). Rather common.
3. *Larus glaucus* *Brünn.* Common.
4. *Larus leucopterus* *Faber.* Common.
5. *Larus philadelphia* (*Ord*). Common; breeds.
6. *Sterna paradisea* *Brünn.* Common.
7. *Merganser serrator* (*Linn.*). Common; breeds.
8. *Anas carolinensis* *Gmel.* Common; breeds.
9. *Dafila acuta* (*Linn.*). Abundant; breeds.
10. *Anser albifrons gambeli* (*Hartl.*). Abundant; breeds.
11. *Branta canadensis minima* *Ridgw.* Abundant; breeds.
12. *Olor columbianus* (*Ord*). Rare.
13. *Grus canadensis* (*Linn.*). Common.
14. *Tringa minutilla* *Vieill.* Numerous.
15. *Ereunetes pusillus* (*Linn.*). Common.
16. *Totanus flavipes* (*Gmel.*). Common; breeds.
17. *Bartramia longicauda* (*Bechst.*). Common; breeds.
18. *Actitis macularia* (*Linn.*). Rather rare.
19. *Numenius tahitiensis* (*Gmel.*). One specimen.
20. *Ægialitis semipalmata* *Bonap.* Common.
21. *Arenaria melanocephala* (*Vig.*). Rare.
22. *Dendragapus canadensis* (*Linn.*). Seen once; found breeding.
23. *Lagopus lagopus* (*Linn.*). Not abundant.
24. *Circus hudsonius* (*Linn.*). Not uncommon; breeds.
25. *Archibuteo lagopus* (*Brünn.*). One specimen.
26. *Falco columbarius* *Linn.* Rather common; breeds.
27. *Pandion haliaetus carolinensis* (*Gmel.*). Common; breeds.
28. *Asio accipitrinus* (*Paßl.*). One specimen.
29. *Ceryle alcyon* (*Linn.*). Common; breeds.
30. *Perisoreus canadensis fumifrons* *Ridgw.* Common; breeds.
31. *Corvus corax sinuatus* (*Wagl.*). Common.
32. *Scolecophagus carolinus* (*Mull.*). Not common.
33. *Acanthis linaria holbeillii* (*Brehm.*). Only a few seen.
34. *Calcarius lapponicus* (*Linn.*). Common on the coast only.
35. *Zonotrichia intermedia* *Ridgw.* Very common; breeds.
36. *Spizella monticola ochracea* *Brewst.* Rare; breeds.

37. *Junco hyemalis* (*Linn.*). Not numerous.
38. *Passerella iliaca* (*Merr.*). Rare.
39. *Tachycineta bicolor* (*Vieill.*). Common; breeds.
40. *Chelidon erythrogaster* (*Bodd.*). Common; breeds.
41. *Lanius borealis* *Vieill.* Seen but once.
42. *Dendroica aestiva* (*Gmel.*). Common; breeds.
43. *Dendroica coronata* (*Linn.*). Very common; breeds.
44. *Dendroica striata* (*Forst.*). Not common; breeds.
45. *Seiurus noveboracensis* (*Gmel.*). Moderately common.
46. *Sylvania pusilla* (*Wils.*). Common.
47. *Anthus pensylvanicus* (*Lath.*). Only a few seen.
48. *Parus hudsonicus* *Forst.* Seen once only.
49. *Phyllopeustes borealis* (*Blas.*). One specimen.
50. *Turdus aliciae* *Baird.* Common.
51. *Merula migratoria* (*Linn.*). Common.
52. *Hesperocichla nævia* (*Gmel.*). Common; found breeding.

It will be noticed that some of the best known boreal species, such as the Hawk Owl, Snowy Owl, Pine Grosbeak, Crossbill, Gyrfalcon, etc., are conspicuous by their absence; but I saw nothing of them, although the country is sufficiently diversified to be adapted to the wants of almost all of them.

SUMMER BIRDS OF THE BRAS D'OR REGION OF CAPE BRETON ISLAND, NOVA SCOTIA.

BY JONATHAN DWIGHT, JR.

So far as I can learn, no definite information regarding the birds of Cape Breton has found its way into print. I feel, therefore, that the list of species I met with during a couple of weeks spent last summer in the centre of the island may be of some interest. My stay was from August 4 to August 16, and I will venture to say that the species noted during that period are a fair index of the summer residents of the country bordering upon the Bras d'Or lakes, although my observations were confined chiefly to the immediate vicinity of Baddeck, Victoria Co., N. S. As one may see by the map, the Great and little Bras d'Or nearly cut the island in two, forming large inland seas, resembling lakes, which are little affected by the tide, on account of their narrow connection with the ocean. Around them hills slope up

from the water's edge to a height of several hundred feet, sometimes reaching an altitude of six or seven hundred, but nowhere deserving the name of mountains. There is a great similarity in the shores as one sails along them. Green fields largely replace the forest that has retreated from the attacks of the farmer, in some places to the very tops of the highest hills, and dotted about upon the hillsides one sees little houses and barns. To the eastward the hills become higher and wilder, and white cliffs of plaster gleam in the sunlight between the green forest above and the blue water below, adding much to the picturesqueness of scenery that is unmarred by tracts of standing dead timber and the look of desolation so common in the northern woods. With the northern part of the island, which is mountainous, rugged, and wild, and with the coast and its sea birds, I had nothing to do.

Occasionally I met with a few shore birds, but the gravelly beaches of the Bras d'Or do not attract them. The Arctic Tern was a constant feature in the landscape, and here and there specked with white the blue expanse of water. It breeds unmolested on some of the small islands and jutting points about the lakes, and was one of the most conspicuous species I met with. The Kingfisher and the Spotted Sandpiper were the only other species daily seen along the shore. Sometimes I used to see Herring Gulls, one day I saw a Petrel, and several times I saw a few Ducks, mostly 'flappers,' but none of these were identified with certainty. Neither were two sets of Ducks' eggs, found one day upon a small island, although the nests and eggs corresponded in every way to a genuine set of the Red-breasted Merganser I once found similarly situated.

Near the village of Baddeck, hay-fields, in which the crop was being gathered at the time of my visit, extend along the shore. Back of them is a partly cleared divide covered with spruce and fir, and a sprinkling of maple, birch, and larch, none of the timber large, and many of the clearings, especially if wet, grown up with alders. This divide slopes down into the valley of the Baddeck River, where hay-fields are again the most prominent feature. North of this the mountains begin in a low range some seven miles from Baddeck, but I got no farther in my explorations than the heavy timber extending to the foot of these, and therefore, no doubt, several forest-loving species are lacking in my list.

I expected to find more Warblers than I did, the Black-throated Green, the Magnolia, the Myrtle, and the Black-and-White Warblers being the only ones that could be called fairly common. They were often associated with Hudsonian Chickadees, Golden-crowned Kinglets, and a few Black-capped Chickadees. Many of the species noted were leading about noisy young birds that had much more to say for themselves than their more discreet parents, although few songs of any sort were heard. The Slate-colored Junco trilled once in a great while, but I did not hear the White-throated Sparrow nor the Hermit Thrush even once, and I saw little of them in consequence. I met with the Chipping Sparrow but once. This was at Whycocomagh, twenty miles southwest of Baddeck, where on August 11 I saw a family. Here, too, I saw the first flock of Swallows (mostly Bank and Cliff Swallows) ostentatiously ready to migrate. The latter species was still breeding on barns in two localities I visited, but not abundantly. There were not many nests, all told. Barn and White-bellied Swallows were fairly abundant. Several species of Sparrows, Goldfinches, Purple Finches, and Rusty Blackbirds were to be found almost daily about the fields and swampy 'runs,' and a few Chimney Swifts and Night-hawks were occasionally seen. The Kingbird, Bobolink, and Rose-breasted Grosbeak were each met with once, and most of the other species mentioned came under my notice only occasionally. Ravens are said to be common farther north. I saw but one. Crows and Robins abounded. Every day or two I would see an Eagle sailing overhead, and those identified were Bald Eagles. Woodpeckers were scarce. The Ruffed Grouse of the region as well as the Canada Grouse were very tame. One day I drove by a pair of the latter at the roadside, momentarily mistaking them for a pair of speckled bantams. The male was puffed up and strutting about much like a miniature turkey-cock, while the female, and a young one two-thirds grown, looked on in admiration.

I may say in conclusion that the weather during my stay was mostly bright and pleasant, the thermometer daily in the seventies, and fresh breezes prevailing.

I might advance several plausible reasons why I did not find other species that I have often met with in some parts of Nova Scotia and New Brunswick, but I prefer not to theorize, and close with a list of those that actually came under my notice.

1. *Larus philadelphus.*
2. *Sterna paradisaea.*
3. *Ardea herodias.*
4. *Rallus virginianus?*
5. *Gallinago delicata.*
6. *Tringa minutilla.*
7. *Ereunetes pusillus.*
8. *Totanus flavipes.*
9. *Actitis macularia.*
10. *Arenaria interpres.*
11. *Dendragapus canadensis.*
12. *Bonasa umbellus togata.*
13. *Circus hudsonius.*
14. *Haliaeetus leucocephalus.*
15. *Falco sparverius.*
16. *Coccyzus sp?*
17. *Ceryle alcyon.*
18. *Dryobates villosus.*
19. *D. pubescens*
20. *Sphyrapicus varius.*
21. *Colaptes auratus.*
22. *Chordeiles virginianus.*
23. *Chætura pelagica.*
24. *Tyrannus tyrannus.*
25. *Empidonax flaviventris.*
26. *E. pusillus traillii.*
27. *Cyanocitta cristata.*
28. *Corvus corax sinuatus.*
29. *C. americanus.*
30. *Dolichonyx oryzivorus.*
31. *Scolecoptagus carolinus.*
32. *Carpodacus purpureus.*
33. *Spinus tristis.*
34. *Ammodyramus sandwichensis
savanna.*
35. *Zonotrichia albicollis.*
36. *Spizella socialis.*
37. *Junco hyemalis.*
38. *Melospiza fasciata.*
39. *M. georgiana.*
40. *Habia ludoviciana.*
41. *Petrochelidon lunifrons.*
42. *Chelidon erythrogaster.*
43. *Tachycineta bicolor.*
44. *Clivicola riparia.*
45. *Ampelis cedrorum.*
46. *Vireo olivaceus.*
47. *Mniotilla varia.*
48. *Dendroica aestiva.*
49. *D. coronata.*
50. *D. maculosa.*
51. *D. virens.*
52. *Geothlypis trichas.*
53. *Sylvania pusilla.*
54. *Setophaga ruticilla.*
55. *Parus atricapillus.*
56. *P. hudsonicus.*
57. *Regulus satrapa.*
58. *Turdus aonalaschkei pallasi.*
59. *Merula migratoria.*

ON THE AVI-FAUNA OF PINAL COUNTY, WITH
REMARKS ON SOME BIRDS OF PIMA AND
GILA COUNTIES, ARIZONA.

BY W. E. D. SCOTT.

With annotations by J. A. Allen.

(Continued from Volume III, p. 432.)

106. *Tyrannus verticalis.* ARKANSAS KINGBIRD.—One of the commonest and most conspicuous birds of the plains about Tucson, Florence, and Riverside, from early springtime until late in autumn. I have found that it arrives in the Catalinas about the last of March (the 28th is the

earliest record), and becomes common during the ensuing week. The latest record I have of it in the foothills proper (altitude, 400 feet) is September 5; but even by the 20th of August they begin to be uncommon at this elevation. I found them late in April (April 19-24, 1885) rather common up to about 9000 feet, but did not find them in the pine forests. Two broods of from three to five young are generally raised each season, the altitude of the nest from the ground varying greatly with the surroundings, and the kind of tree is seemingly a matter of indifference.

107. *Tyrannus vociferans*. CASSIN'S KINGBIRD.—Though doubtless occurring as a migrant on the plains, I have records of this species only from the foothills about Riverside and from the Catalina Mountains. It does not, so far as I am aware, breed at so low altitudes as *T. verticalis*, nor is it as abundant or so generally distributed in the breeding season as that species. It arrives in the Catalina foothills late in March, my first record, and that of but a single bird, being March 28th, 1885, at an altitude of 3500. The general arrival for the same year and locality was April 7. Pairing and mating was first noticed April 16, 1885. At the higher limits of its range in the breeding season—about 9000 feet—it is much more common than *T. verticalis*, though the reverse is true as regards the lower limit of its range—about 3500 feet—in the breeding season. Though arriving about the same time of year as *T. verticalis*, all my observations lead me to believe that its stay in the mountains and foothills is very much longer than that of its congener. At an altitude of 3500 feet, which is the extreme lower limit of the evergreen oaks, I found *T. vociferans* not at all uncommon on October 9, 1884, and my note book bears constant record of its occurrence up to that time, while I find nothing about *T. verticalis* later than early September in the same region; all these notes being made in the Catalina Mountains.

Two broods of from three to five young are usually reared each season; and the position of many nests I have examined shows a decided preference for the evergreen oaks over other trees. The nest, which is commonly from twenty to twenty-five feet from the ground, is most always placed near the extremity of a branch, and is sheltered and hidden by the thick leaves.

108. *Myiarchus mexicanus magister*. ARIZONA CRESTED FLYCATCHER.—This species I have found to be common in spring and summer about Tucson, Florence, Riverside, and in the foothills of the Catalina Mountains up to about 4500 feet, which is the extreme limit in altitude indicated by my notes. It is as common at all these points as is *M. crinitus* at any point where I have met with that species, and just about Tucson, in the mesquite and giant-cactus groves, it is much more abundant than is *M. crinitus* at any point in its habitat which I have visited. In the Catalinas, altitude 4000, the species arrives about April 20, and remains until late in August or early in September. I found a nest at this point built in a deserted Woodpecker hole in a dead sycamore stub. It was entirely similar in construction to that of *M. crinitus*, even to the traditional snake skins, and contained five eggs nearly ready

to be hatched, very similar to those of *M. crinitus*, save that they are a little larger. But one brood is reared in the Catalina region. About Tucson they nest commonly in deserted Woodpecker holes in the giant cactus.

109. *Myiarchus cinerascens*. ASH-THROATED FLYCATCHER.—An abundant migrant and summer resident, breeding throughout the region in suitable localities. It arrives in the Catalinas about the 20th of March, and on the plains somewhat earlier; a few probably spend the winter at the lower altitudes in the extreme southern portion of the Territory. I have no records that indicate a later stay in the Catalina or Pinal Mountains than about the last of September. The nests are placed in deserted Woodpecker holes and in natural cavities in almost any kind of tree, and also in the giant cactus. Two broods are reared at the lower elevations, and from three to five eggs are laid.

[A half-fledged nestling is much darker in color above, and less gray on the throat and breast, than are the adults. The head in the young bird is decidedly *blackish* brown; the rest of the dorsal plumage dark brown. The wing-coverts and inner secondaries are edged with reddish brown instead of white, and the rectrices are broadly edged externally with rufous, without white edging on outer pair. The dusky area is much narrower and blacker than in adults.—J. A. A.]

110. *Myiarchus lawrencei olivaceus*. OLIVACEUS FLYCATCHER.—My personal experience with this species is limited to the capture and record of but a single individual. It was taken in a cañon in the Catalina Mountains, at an altitude of 5000 feet, and is catalogued as "No. 66, ♂, 13th June, 1884." Mr. F. Stephens found the species commonly in the Santa Rita Mountains.

111. *Sayornis saya*. SAY'S PHOEBE.—Common winter resident, and a regular though not very common migrant and summer resident, breeding sparingly, in the Catalina Mountains. My earliest records of it, near my residence, are about the first of March, and it remains till the approach of cold weather. My latest notes of it in fall are 20th and 21st of December, 1885, when I saw one each day; altitude, 4000 feet. It winters commonly on the San Pedro River, about twelve miles from the point indicated in the Catalinas.

112. *Sayornis nigricans*. BLACK PHOEBE.—Not so common as the last. A regular resident in the valleys about water courses, and a migrant and summer resident in the Catalina Mountains. I first noted its arrival (altitude, 4000 feet) on March 25, 1885, and it remains at this point till cold weather comes on. A number of young birds in the collection were taken in the Catalinas about the middle of July. I noted the bird on the San Pedro River, January 28-30, 1886, when only a few were seen.

113. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.—A rather common spring and fall migrant in the Catalina Mountains, and also noticed once in early August in the Pinal Mountains. I have been unable to ascertain whether it breeds in the Catalinas. In spring in the Catalinas (altitude, 4500 feet), it appears for a few days late in April, and the earliest

fall record is September 2, from which time until about October 1 I constantly met with it. In the pine forests of the Catalinas, though *C. pertinax* was common late in April, I made no record of *C. borealis*.

114. *Contopus pertinax*. COUES'S FLYCATCHER.—Twice during my long stay in the Catalinas I noticed or took this species near my house, and this is the lowest altitude at which I am aware of its occurrence. My records are "837. ♂ juv., 7 September, 1884."; "April 27, 1885, one seen, altitude 4000 feet."

For detailed notes as to the occurrence of this species in the pine forests of the Catalina Mountains, see my paper in 'The Auk' (Vol. II, No. 4, October, 1885, p. 356), entitled "Early Spring Notes from the Mountains of Southern Arizona."

115. *Contopus richardsoni*. WESTERN WOOD PEWEE.—The following notes in regard to this species are all from the Santa Catalina Mountains, though the bird doubtless occurs throughout the region under consideration. The first noted in spring was April 27, 1885, when two were seen and one other taken, at an altitude of 4500 feet. Became common May 10, 1885. The first nest was noted June 9, 1885; parent sitting on three fresh eggs.

In the fall I found it common in September up to the 29th, in 1884, when it was last seen. Two and occasionally three broods of from one to three young are reared in this locality during the summer.

116. *Empidonax difficilis*. BAIRD'S FLYCATCHER.—I have taken this species in the Catalina Mountains from June 2 to October 28. Most of the specimens taken, however, were collected in September and October, when it is not uncommon.

117. *Empidonax pusillus*. LITTLE FLYCATCHER.—The only specimens of this species obtained are two, taken August 15, 1884, in the Catalina Mountains; one is an adult male, the other a young male.

118. *Empidonax hammondi*. HAMMOND'S FLYCATCHER.—A spring and fall migrant in the Catalina Mountains where all the specimens here recorded were taken. The earliest notes of spring arrival which I have are a single bird (No. 2024) taken March 31, 1885, at an altitude of 4000 feet. The arrival of the birds was general on the 7th of April, and the last seen in spring were taken May 5 and 10, 1885. In fall I have taken the birds at the same point from early in October until the 25th of that month.

119. *Empidonax obscurus*. WRIGHT'S FLYCATCHER.—Of the four specimens of this species taken in the Catalina Mountains (altitude 3500 to 4500 feet) three were taken in May and the other on August 15. I have no data on the distribution of this bird in other parts of Pinal County.

120. *Pyrocephalus rubineus mexicanus*. VERMILION FLYCATCHER.—This was one of the more conspicuous and common species at Riverside during the month of April, 1882, and was also noted there throughout the summer. It is resident about Tucson, and also at Florence, and though it is not common at either point during the winter, I have records of its

occurrence for every month in the year. The representatives at both places during the colder months seem to be large young birds of the year, and generally young males. On the foothills of the Catalina Mountains it is a common migrant, many breeding at the lower altitudes, and a few ranging up to and breeding at an altitude of 4500 feet, which seems to be about the limit of the vertical range. The earliest record of arrival that I have in this region is February 28, 1885, when I took a male in full plumage, at an altitude of a little over 3000 feet. I did not meet with another until March 7 of the same year. On the 12th of March I took a male, the third of the season, and saw another male and the first female of the year. By the 20th of March the arrival seemed to be general, and the birds soon began nesting. On May 1, 1885, they had generally begun building, and a nest examined contained two fresh eggs. On the 4th of May of the same year another nest examined contained three perfectly fresh eggs; and this is the maximum number I have found.

I met with this species at Mineral Creek, in the Pinal Mountains (altitude about 4000 feet), in May, and again in August, but I have not observed it in winter on any of my visits to the valley of the San Pedro River, which is in elevation about the same as Tucson, though further north. The species leaves the foothills of the Catalina Mountains by October 1-10.

121. *Otocoris alpestris chrysolaema*. MEXICAN HORNED LARK.—In the parts of Arizona under consideration I have not met with any Horned Lark very commonly. Mr. Brown found this form about Tucson, particularly in the fall and winter months.

All the Larks that have come under my observation were on the dry mesas, and I have met with them only in the fall and winter, and then sparingly.

122. *Cyanocitta stelleri*. LONG-CRESTED JAY.—The data in regard to this species already presented to the readers of this journal (see Auk Vol. II, 1885, pp. 174, 355) give all that is available as to its permanent residence in the Catalinas. Generally with cold weather many representatives leave the pine woods and descend as low on the foothills as an elevation of 3500 feet. I noticed the birds as generally not uncommon during the winters of 1884-85 and 1885-86 in the oak region, in late December and January. At other seasons they are confined to the pine forests. I saw them commonly in the pines of the Pinal Mountains in October, 1883.

123. *Aphelocoma woodhousei*. WOODHOUSE'S JAY.—A common and resident species at the headwaters of Mineral Creek. Also common in the foothills of the Catalinas, where it breeds. It frequently associates with *A. sieberii arizonae*, but is not so gregarious as that species. Breeds in late April and May, and I think but one brood is reared. As far as I am able to judge, this species does not range below 3000 nor above 5000 feet in the foothills of the Catalina Mountains. I have not met with it at other points than those indicated in the Pinal and Catalina Mountains.

124. *Aphelocoma sieberii arizonae*. ARIZONA JAY.—Having discussed

this species at some length in a recent number of 'The Auk' (see Vol. III, January, 1886, pp. 81-83) I refer the reader to that paper. The Catalina region is the only point where I have met the species, where it is very abundant, resident, and breeds, ranging almost coincidently with the evergreen oak forests.

[Mr. Scott's large series (45 specimens) of this interesting species presents some noteworthy variations. In about one-third the bill, for example, is wholly deep black; most of the others have the base of the lower mandible more or less whitish or flesh-color, the light portion varying from a slight trace at the base to a complete yellowish-white under mandible. This light tint also sometimes includes the edges and base of the upper mandible. This light color is frequently varied with a pinkish shade, as is markedly the case in young birds of the year. The light color of the bill occurs apparently only in fall specimens, but is doubtless a feature of immaturity rather than of season, since many of the dark-billed birds are autumnal specimens.

The color of the interscapular region varies from blue, slightly or scarcely tinged with ashy, to a decided ashy brown, regardless, apparently, of sex, age, or season. The anterior lower surface likewise varies from bluish gray to a brownish or buffy gray.

A bird in nestling plumage (No. 507, July 5, 1884) has the interscapular region dark brownish ash; the head gray, with a very slight cast of blue; breast and sides strongly washed with brownish ash; middle of the throat white.

No. 1290, ♀, Oct. 16, 1884, differs from all the others in having a large area of pure white on the throat, probably due to albinism.—J. A. A.]

125. *Corvus corax sinuatus*. AMERICAN RAVEN.—A common species about Tucson and throughout the region, but I do not think it is more abundant than the following species. I have not found it breeding, but it is present all the year.

126. *Corvus cryptoleucus*. WHITE-NECKED RAVEN.—Almost the same remarks apply to this as to the foregoing. It is common at times about Tucson, and I have frequently noticed it at other points.

127. *Corvus americanus*. AMERICAN CROW.—The first Crows I saw in Arizona were at the head of Mineral Creek, where they were uncommon. I have since seen them in spring and fall on the foothills of the Catalina Mountains in very large flocks. I am not aware of their breeding at any point in the region in question, and have never met the species during the summer months.

128. *Cyanoccephalus cyanocephalus*. PIÑON JAY.—The only point where I have met with this species is in the Catalina Mountains, and even here I believe that it can not be considered a regular visitor. The first noted was a flock of about forty, which appeared on the hills near American Flag on the 17th of September, 1884. Again a flock of about the same number was noticed on September 24 of the same year, and three other flocks, some of them much larger, appeared the same day. On the 28th of the same month other large flocks, and a few single birds, were

seen. The birds were very shy and restless, constantly uttered a peculiarly harsh cry, and were in almost incessant motion. The only one procured out of all the birds seen was a young female of the year (No. 951), taken September 29. All through the ensuing month of October flocks of from twenty to several hundred individuals were noted almost daily, but after November 1 the birds began to leave, and by the 10th my notes as to their occurrence cease. This is the only season—part of September, all of October, and part of November, 1884—when I have seen the birds in Arizona. Their range seemed to be limited to the lower part of the evergreen oak belt, for they were not noticed lower than 3000 nor higher than 6000 feet.

129. *Molothrus ater obscurus*. DWARF COWBIRD.—A common species at Riverside in April, 1882. Also not uncommon about Tucson and Florence. At times they were rather plenty in the foothills of the Catalinas, particularly in early spring. Their habits appear to be identical with those of the Cowbird of the East. I have found their eggs in the nest of such species as *Amphispiza bilineata*, and also in the nest of *Icterus cucullatus nelsoni*.

130. *Xanthocephalus xanthocephalus*. YELLOW-HEADED BLACKBIRD.—This is a particularly abundant species about Tucson and Florence in fall, winter, and spring, but I have no notes of its occurrence at any of these points in summer. It is also abundant in the valley of the San Pedro River in the winter; I noted very large flocks there in January, 1886. These birds have the habit of passing in enormous companies, morning and evening, presumably between their feeding and roosting places, and at such times, being at an elevation a little above gunshot, the noise made in flight almost exactly resembles the cry of the Sandhill Crane (*Grus mexicana*) when heard at a short distance.

131. *Agelaius gubernator*. BICOLORED BLACKBIRD.—A common resident. Particularly numerous at the lower elevations along water courses, and about towns during the colder months.

131. *Sturnella magna neglecta*. WESTERN MEADOW LARK.—Resident, but perhaps more abundant in the fall and winter months. I have no records of its occurrence above four thousand feet on the mountains.

133. *Icterus parisorum*. SCOTT'S ORIOLE.—The breeding and general habits of this species I have already discussed at some length in this magazine (Auk, Vol. II, Jan. 1885, pp. 1-7). Since writing that paper, however, I have found that the time of arrival, even in the region there considered, is somewhat earlier than my former observations had led me to think, being first noted March 22, 1885, and becoming common within a week. On the 25th of March I heard a number of males in full song, (altitude, 4500 feet). On the 4th of May, 1885, at an altitude of 4500 feet, I found a nest containing two fresh eggs. On the 9th of May a female (No. 2404) was taken which was in remarkably high plumage, resembling very closely the males when a year or more old, having the head and neck fully as dark as it is in such males.

On May 20, 1885, a nest, at an altitude of a little over 3000 feet, contained

three young about ready to fly. I must so far modify my former views as to state that I find fully as many of the birds breed on the arid plains and mesas, at an altitude between 3000 and 8000 feet, as seek a nesting site near water. I have found them with nests at least six miles from the nearest water that I knew of.

Young taken from the nest when about ready to leave it become very tame and familiar, and one that I took in this way began to sing before a year old, and was so tame as to be allowed the run of the house. It was very intelligent and inquisitive, and would frequently alight on my chin or head and strive to open my lips with its bill, or in the same way my eyes if I closed them.

[The young in nestling plumage are scarcely different in color from young birds in fall plumage.

As noted above, a female in the collection has the throat and breast black, and the whole head blackish, as in ordinary yearling males. There is also another female (No. 2414) which has the throat and breast black, but less intensely so than in the last, while the head is as in the ordinary adult female.—J. A. A.]

134. *Icterus cucullatus nelsoni*. ARIZONA HOODED ORIOLE.—The earliest notes I have of the arrival of this species in spring is March 28, 1885, and in a week they were common. This was in the Catalinas at an altitude of 4000 feet. At the same point a few remain till late in September. The birds are common throughout the area under discussion, are absent from the region as a whole only about four months in the colder part of the year, and range in summer up on the mountain sides to nearly 6000 feet. For a discussion of the breeding habits in detail see Auk, Vol. II, April, 1885, pp. 159-165.

[On comparing Mr. Scott's series of 25 adult males of this newly described form (see Proc. U. S. Nat. Mus., VIII. 19 April, 1885) with a similar series of true *cucullatus* from the Lower Rio Grande, Texas, in Mr. Sennett's collection, the difference in color claimed by Mr. Ridgway for these two forms proves to be well sustained. The palest specimen in Mr. Sennett's series is but little more deeply colored than the brightest examples in the Arizona series, but the average difference is striking and well maintained. The difference, however, seems to be mainly limited to intensity of color, although the Arizona form shows a rather broader edging of white on the remiges and wing-coverts.—J. A. A.]

135. *Icterus bullocki*. BULLOCK'S ORIOLE.—This species, though not uncommon about Tucson and Florence, where it probably breeds rarely, is rare in the Catalina Mountains, where I have met with it but twice, as follows: No. 233, Catalina Mountains, alt. 4500, ♀, May 12, 1884; No. 671. Catalina Mountains, alt. 4500, ♂ juv., July 31, 1884. On the strength of this last record is based the conclusion that the bird sometimes breeds in this region.

136. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.—An abundant winter resident at and about Tucson, Florence, and Riverside; in fact almost anywhere in the region below an altitude of 3000 feet, where

there is suitable food and water. It is very familiar about all the towns and houses during the colder months.

I have observed it but once in the Catalina Mountains—on October 2, 1884, when I took a female (No. 1012), the only one seen, at an altitude of 4500 feet.

(To be continued.)

SOME UNDESCRIPTED PLUMAGES OF NORTH AMERICAN BIRDS.

BY GEORGE B. SENNETT.

Sterna fuliginosa. SOOTY TERN.

I HAVE been able to find but one attempt at describing the young of this species while yet in the down, and that description must have applied to older specimens than those before me. In 'The Ibis,' 1868, p. 286, Captain Sperling (whose description is referred to in B. B. & R. Water Birds, Vol. II, p. 314) describes the young as follows: "The young were of a very light sooty color, both above and beneath, the ends of most of the feathers having a white spot the size of a pea, which gives to them a speckled appearance." Saunders, in P. Z. S., 1876, p. 667, says: "The young are dark on the underparts." This indicates his reference to a more advanced stage of growth.

Downy Stage:—Underparts white; throat and sides of neck speckled dark gray and white. The whole upper parts are covered thickly with sooty and white downy tufts, the former tipped with black points and the latter with reddish fulvous points, giving to the whole upper surface a mixed speckled appearance of black, white, and fulvous. In one specimen the dark color predominates and in the other the fulvous.

Aythya collaris. RING-NECKED DUCK.

Downy Stage:—Underparts very pale yellow; forehead and sides of head and neck the same, washed with dark fulvous yellow; the same yellow is on underside of wing and, alternating with brown, covers the side of body. The crown, line down back of neck, wings, and line down tibia to tarsus, whole of centre of back, and spaces between the yellow patches, a rich brown.

Colinus virginianus texanus. TEXAN BOB-WHITE.

First Plumage:—Half grown female, taken Aug. 18, in Texas. Throat and lower belly creamy white; postocular stripe same color barred with brown; crown ashy brown with broad median line of darker brown; auric-

ulars brown. Cervical collar rich brown, white, and fulvous; conspicuous, but not meeting in front. Back light ashy brown with white shaft-lines and tips, and dark brown mottlings toward the ends of the feathers. Coverts and tertaries strongly marked with patches of dark brown; inner edge fulvous. Wings very light brown, barred, spotted, and tipped with dull white. Tail brownish drab, barred with dull white. There is a fulvous tinge on closed wing, rump, and tip of tail. Jugulum light ashy brown with faint white shaft-lines. The remaining underparts, including tibia, show plainly a barred appearance of yellowish white and brown. Bill and feet yellow.

Callipepla squamata castanogastris. CHESTNUT-BELLIED SCALED PARTRIDGE.

First Plumage :—In the specimen before me, a male, taken October 29, in Texas, the adult plumage is just coming out, but does not yet conceal the first growth of feathers. The bird, I should judge from the size of skin, the feet, and the bill, to be nearly full grown. Top of head light brown, darker in centre, with only the slightest tinge of the drab or light blue common to adults in fresh plumage. The crest is conspicuous and peculiar, forming two prongs or forks, and is composed of four brownish white feathers about three-quarters of an inch long. These crest feathers correspond to the longest and white-tipped ones of adult, but, unlike them, are not ragged or hairlike, being firmly rounded, nearly as much as the plumes of the common Night Heron. The dark brown coverts (so to speak) of the crest are not conspicuous, being just a little longer than the feathers of the crown, and are evidently just growing out. The feathers of back are light brownish drab, without edgings, but with white shaft-lines enlarged at the end. The coverts and scapulars are strongly waved with dark brown and rufous, having heavier white shaft-lines than on the back. The tertaries have the white shaft-lines and waves only on lower end of feathers; the outer edges being strongly mottled with brown and gray. The wings are plain brown, the longest quills being faintly edged with spots of light fulvous gray. Rump brownish blue; tail dark grayish blue barred and speckled with dark brown and ashy white. Throat light bluish gray; the feathers having small dark centres, thus giving a faintly speckled appearance. Breast dark drab with all the feathers showing white shaft-lines as on back. Belly, crissum, and tibia dingy yellowish white, thickly barred with brown and fulvous. Bill very dark brown above and pale below. Feet yellow.

Catharista atrata. BLACK VULTURE.

Downy Stage :—Entire body densely covered with long silky down of uniform light fulvous color. Throat and lores bare. The whole top of the head is covered with a thick down of two distinct lengths, the longer of which is much shorter than the body down; looking at the head from above, this longer down is seen to grow in such shape as to form a patch having the outlines of a perfect spear-head; the spear-point stands toward

the bird's bill, while the barbs extend backward over each eye, with the shank losing itself down in the nape of the neck. This peculiar form is made distinct not only because the down forming the spear-head is twice as long as the rest of the head-growth, but while the short down of the head is of a dark grayish color, the long down of the spear-head has its edges sharply defined in black shading to a fulvous toward the centre. Bill dark horn color. When the bird is half grown and the quills are just appearing, the down on the head has about disappeared, leaving the whole head black and nearly bare, the very minute and scattered growth of feathers being scarcely noticeable. The down on the body is still as dense as ever and very long. The color of the whole anterior half of the bird has become redder and richer, while the posterior half has become darker. The bill is black throughout. The down is now more than an inch in length, and the bird presents a grotesque appearance, very much as if it had covered its nakedness with a miniature faded buffalo skin over coat.

Parabuteo unicinctus harrisi. HARRIS'S HAWK.

Downy Stage:—All the upper parts uniform light tawny; underparts and lores white with a tawny tinge on jugulum. Bill light brown horn color above and yellowish white below. Just before the feathers appear the down loses most of its tawny color above and the young bird looks much whiter.

First Plumage:—The crown, remiges, long scapulars, and zone of tail deep rich blackish brown with purplish reflections; all the feathers of crown, back, and rump tipped and edged lightly with chestnut. Feathers over eye so broadly edged with light chestnut as to form a superciliary line. Wing-coverts with more extensive and darker chestnut than in adult. Upper and lower tail-coverts and terminal tail-band white tinged with tawny. Throat streaked with black and tawny. Feathers of breast black and tawny, and those of belly black and white. Tibia dark chestnut with narrow bands of fulvous. Feet yellow; claws black; bill dark horn color.

Buteo albicaudatus. WHITE-TAILED HAWK.

I have in my collection six nestlings, taken in Texas, which are very interesting and peculiar. Two of them are two days old, two four days old, one about a week old, and the sixth about half grown, with its quills and first feathers just started.

Downy Stage:—Well covered with cottony down, most dense on head and wings, and thinnest on throat and belly. The color underneath is richer on upper back and wings, shading into brown on back of neck. Whole top of head thickly covered with soft hair-like feathers from half an inch to three-quarters of an inch in length, bristling up individually and showing, when looked at from above, the pale tawny color of their

downy bases. The color of these long hair-like feathers which crown the head is dark brown, almost black, on four of the very young, and lighter brown on one of the specimens, which is the only marked variation among the five youngest. A narrow black band encircles the eye, and the eyelids are jet black. The bill is glossy black above and horn color below. The feet are flesh color, the claws pale in very youngest, and shading into horn brown in the specimen a week old. These interesting young Hawks, with their varying shades of color, and their tall, erect head-tufts, present a most peculiarly pugnacious appearance.

Half-grown young, still in the downy stage, with first feathers just started:—The entire bird is thickly covered with long white down suffused with tawny ash on neck, sides, belly, and rump. On every part of the body feathers have started through the down; they are hardly noticeable on the throat, but plainly seen on head and belly, and most developed on back and wings. All the feathers, excepting primaries, rectrices, and on the jugulum, are very dark brown, almost black, and strongly tipped with rufous on scapulars, wing-coverts, and secondaries, and with tawny mixed with white on other parts. The primaries project an inch from the quill-sheath and are black, tipped almost imperceptibly with white. The rectrices project only half an inch from the quill-sheath, are tipped and edged with white, and are of that hoary ash color so prevalent in full-grown birds of first year. The feathers starting on the jugulum and breast, which can be noticed by parting the down, are tawny. Many of the long, erect, hair-like filaments which crown the head are, with their downy bases, still attached to the new outgrowing feathers and give the youngster a very unkempt appearance. The black bands around the eye and the black of the eyelids have almost disappeared. The bill is now approaching a horn color, having lost its black gloss. The claws are deep blue black.

Polyborus cheriway.—AUDUBON'S CARACARA.

Downy Stage:—Fur-like down fully half an inch in length covering the entire chick; this down is not very thick except on the crown. The color is chiefly light buff shading to cream on throat; dorsal stripe and flanks light brown; a patch of darker brown on shoulder and edge of wing. Crown to middle of eye and nape deep reddish brown. On back and belly, underneath the down, can be seen the dark flecks in the skin containing the embryo feathers.

Chordeiles texensis. TEXAN NIGHTHAWK.

First Plumage:—Remiges and rectrices brown, strongly edged, tipped, spotted, and barred with rufous; no white spot on wings or tail. Feathers of crown, back, wing-coverts and rump, speckled gray, showing a black arrow-tip in lower half and all tipped with fulvous. The only white is a narrow band over eye. Entire underparts gray, strongly suffused with fulvous and covered with narrow dark bars.

Parus atricristatus. BLACK-CRESTED TITMOUSE.

First Plumage:—Upper parts dark ashy plumbeous strongly washed with olive. Lores ashy white. Crest extends to bill, thus leaving no frontlet. On two of my three specimens, which were shot same place and day (Frazar, Rio Grande City, Texas, June 11th, 1880), the crest is mixed dark ash and black, and on the other the crest color is same as back but a darker shade.

I have also a female young of the year taken by Mr. Bourbois at Lomita, Texas, in July of 1879, which has a crest of mixed black and ash, so it is fair to say that in most cases the first plumage has the black crest mixed with ash and without the gloss peculiar to adults. The sides of head and jugulum are dark ashy white. Throat and middle of belly lighter. Sides washed with very pale chestnut, almost a buff, and a wash of same covers upper belly and lower tail-coverts. The quills are edged and tipped with hoary. Bill horn color. Feet plumbeous.

DESCRIPTIONS OF TWO NEW SUBSPECIES OF TITMICE FROM TEXAS.

BY GEORGE B. SENNETT.

Parus atricristatus castaneifrons, subsp. nov. CHEST-NUT-FRONTED TITMOUSE.

♂ ♀, Adult:—Entire upper parts plumbeous, washed faintly with olive. Crest thin, about one inch in length, restricted to middle portion of the crown; it is of a dark brown color, mixed on edges with ashy plumbeous; edges of crown and sides of both head and neck ashy plumbeous. Frontlet at base of crest chestnut. Lores white. Underparts light ash, washed with chestnut on sides, and with faint traces of same on breast and under tail-coverts. Tail slightly browner than back; wings browner than tail. Size, that of *Parus bicolor*, but with bill even larger. Bill black. Feet dark lead color.

HABITAT. Bee Co., Texas.

Dimensions:—Adult ♂, type, No. 3106; collector's No. 33; J. M. Priour, Bee Co., Texas, April 4, 1886. Wing, 3.12; tail, 2.95; tarsus, .77; bill, .42.

Adult ♀, type, No. 3107; collector's No. 34; J. M. Priour, Bee Co., Texas, April 4, 1886. Wing, 2.95; tail, 2.95; tarsus, .77; bill, .45.

Adult ♂, No. 3108; collector's No. 66; J. M. Priour, Bee Co., Texas, April 9, 1886. Wing, 3.11; tail, 3.; tarsus, .83; bill, .42,

Adult ♀, No. 3161; collector's No. 67; J. M. Priour, Bee Co., Texas, April 9, 1886. Wing, 3.08; tail, 3.; tarsus, .85; bill, .43.

This dark-crested Titmouse strikes one at a glance as being different from *Parus atricristatus*, on account of its chestnut frontlet, its large size, and its crest being smaller and brown, instead of glossy black. A close comparison shows also less olive on upper parts and a more plumbeous tail. It differs from *Parus bicolor* in having the crest brown instead of dark plumbeous, and the frontlet chestnut instead of black. In size it is fully equal to southern specimens of *Parus bicolor*, and its bill is even larger, and is black, with no tendency to horn color. I have compared the four specimens in my collection with more than fifty specimens of *Parus atricristatus*, and with specimens of *Parus bicolor* from New York to Texas and from Kansas to Florida.

**Parus bicolor texensis, subsp. nov. TEXAN TUFTED
TITMOUSE.**

♂ ♀, Adult:—General color same as in *Parus bicolor* but paler. At base of chest a frontlet of chestnut instead of black as in *Parus bicolor*. This frontlet corresponds in color and intensity to the washings on the sides, which vary with age and season. The size is the same as that of *Parus bicolor*, but the bill appears to be longer and stronger, and the tarsus longer.

Adult ♂, type, No. 3104; collector's No. 52; John M. Priour, Bee Co., Texas, April 7, 1886. Wing, 2.95; tail, 2.85; tarsus, .80; bill, .43.

Adult ♀, type, No. 3105; collector's No. 53; John M. Priour, Bee Co., Texas, April 7, 1886. Wing, 3.10; tail, 3.10; tarsus, .85; bill, .45.

Adult specimen in Coll. of G. N. Lawrence, taken in October by Capt. J. P. M'Cown, no sex being given. Wing, 3.10; tail, 2.85; tarsus, .82; bill, .45.

HABITAT. Bee Co., Southern Texas; Brownville.

In comparing specimens of *Parus bicolor* from New York, New Jersey, Pennsylvania, North Carolina, South Carolina, Kansas, Florida, and Texas, I am led to believe that the extreme Southern Texas specimens certainly constitute a variety, and may claim the rank of a distinct species. All these specimens from Southern Texas have the distinct russet or chestnut on the frontlet, whether pale or dark, similar to the washings on the sides. In the young of *Parus bicolor* the frontlet is brown, and in some

of the faded adult specimens the black of frontlet runs through all the changes of color from jet black to brown; but nowhere have I seen on the frontlet any chestnut or russet, those tinges of color so peculiar to the side-markings of the *Parus bicolor* and *Parus atricristatus*. In the far western specimens, notably from Missouri (see Baird, B. N. A., 1858, p. 384), the frontlet of *Parus bicolor* is so intensely black as almost to warrant a new variety on that account. Specimens from Middle and Northern Texas and Kansas are fully as black as the Missouri ones. In an almost direct longitudinal line south of where these intensely black ones are found we come to this interesting form with chestnut frontlets.

FURTHER NOTES ON THE GENUS ACANTHIS.

BY LEONHARD STEJNEGER.

SINCE my first paper on the species of the present genus (Auk, 1, 1884, pp. 145-156), the National Museum has accumulated a vast additional material which enables me to corroborate some statements and modify others in my previous paper.

The enormous series of *A. hornemannii*, *exilipes*, *linaria*, and *rostrata* collected by Mr. L. M. Turner at Ungava, near the entrance of Hudson's Bay, has become available, and fully proves the correctness of recognizing the four forms. In fact, I am very strongly inclined to accept Mr. Brewster's view, that *A. rostrata* is specifically distinct. The outline of its culmen is quite unique in the genus. At any rate it is simply absurd to refer *A. rostrata* to *A. hornemannii* in light of our present material.

The increase of the collection of Redpolls is well illustrated by the fact, that while in 1884 we had only one very indifferent specimen of the British *A. cabaret*, the Museum now possesses a series of 41 specimens, most of which are in excellent plumage, for which thanks are due to Messrs. Blakiston, W. E. Brooks, E. Hargitt, R. B. Sharpe, and H. Seebohm. This additional material compels me to recede from the position previously taken, inasmuch as it proves to me the necessity of recognizing *A. cabaret* as a good and valid species, not a mere subspecies, easily

characterized by its brown rump and small size. The characters are uniform and well pronounced, and I can find no true transition to *A. linaria* proper. The specimens have been very carefully measured, the result being given in the subjoined tables which should be compared with the measurements recorded in 'The Auk,' I, 1884, p. 154, and in my 'Ornithological Explorations in Kamtschatka,' 1885, pp. 253-256.

Thanks to the energetic endeavors of Mr. W. E. Brooks, of Milton, Ontario, who, through Mr. Tristram, obtained the loan of an Italian specimen from the Florence Museum, I have been enabled to examine a specimen of the Southern Small Redpoll, which breeds in high altitudes in the South European mountains. I am under great obligations to the gentlemen mentioned for the trouble they have taken.

The specimen in question, a female in autumnal plumage, is more like *A. cabaret* than any of the other Redpolls. It differs, however, from all the British specimens before me in the following points. (It should be remarked that the specimens are fully comparable, as they are nearly all killed in October and November, six of them being marked as females on the labels.) The Italian bird has the brownish color much brighter and more ochraceous than any of the British specimens, the difference being particularly striking on the lower surface. On the other hand, the southern bird has the outer margins of tail-feathers and tertials distinctly whitish and not pale umber brown as the English ones. Mr. Brooks has already in a letter pointed out to me that the flanks of the Italian specimen are more heavily streaked with dusky, and I may add that it has small but distinct dusky streaks quite across the fore neck, a feature only observed in one of the English specimens before me. As will be seen from the appended measurements, the dimensions are about the same, but the bill is decidedly smaller.

As a matter of course, no decision can be made from a single specimen in this difficult group. But I think it important to call attention to the above differences, for the question whether the English and the South European Redpolls are identical, is a very interesting one. I am strongly inclined to think that it will be necessary ultimately to recognize *A. rufescens* (Vieill.) as different from *A. cabaret*. From the list of specimens quoted by Dresser as examined by him (Birds of Europe, IV, p. 50) it is

evident that he had not the opportunity of comparing English and continental specimens.

The Southern Redpoll seems to be a comparatively rare bird, though it must be remarked that the mountain regions of Southern Europe are very imperfectly worked up ornithologically. It breeds, however, in the Alps and Apennines (cf. Auk, 1884, p. 151), and Mr. Giglioli has recently added Friuli as a locality where it has been found nesting (Avifauna Italiana, 1886, p. 37). According to Dresser (Birds of Europe, IV, p. 49), Baily asserts that it breeds in the Alps of Savoy, and he also gives Adrien Lacroix as the authority for the statement that it is met with *every season* on the northern slopes of the Pyrenees.

When writing my article on *Acanthis* I had no access to the plates of Dresser's 'Birds of Europe,' nor had I any specimens of true *A. exilipes* from the Western Palearctic Region, *i. e.* from Finnmarken and Northern Russia. In the text Dresser stated that he had *A. exilipes* from Tromsøe, in Norway. As it seemed impossible to me that Scandinavian ornithologists who distinguished between *A. linaria* proper and *A. l. holbaellii* should have overlooked or ignored so well pronounced a form as *exilipes*, and as I possessed a specimen of a Redpoll from the very same locality, which certainly was not an *exilipes*, but apparently a pale variety of *A. linaria*, I was inclined to think that Dresser did not know the true *exilipes*, and that his birds and mine formed a special race of *linaria*, which should be called *pallidescens*. In all this I was mistaken, however. Mr. Seeböhm, with a most praiseworthy generosity, has presented the National Museum with a complete copy of Dresser's grand work, and an inspection of pl. 189, fig. 1, at once showed me that Dresser was quite correct. Specimens afterwards received from Messrs. Seeböhm and Brooks, collected at the Petshora and in Siberia, confirm this beyond a doubt, and the habitat of *A. exilipes* is therefore proven to be as completely circumpolar as that of *A. linaria typica*, though more northerly. If the Tromsøe birds (which, remarkably enough, is not included in Dresser's list of specimens examined) are identical with the one figured from Petshora, then *A. exilipes* is certainly to be included in the Norwegian Avifauna, and the '*A. canescens*' which Sommerfeldt reported as observed in the autumn at Tanen (cf. Collett, Rem. Orn. North. Norw., Forh. Vid. Selsk. Christiania, 1872, p. 209) is, in all probability, *A. exilipes*. Whether it breeds in Scandi-

navian territory is yet to be discovered. The specimens taken by Wolley at Muonioniska, Lapland, were collected in the autumn, and nothing definitely is said about the Tromsæ specimens.

As a consequence Severzow's *A. sibirica* and Homeyer's *A. pallescens* are to be reduced to synonyms of *A. exilipes*. The question then arises, what is to become of my *A. linaria pallescens* (nec Homeyer)? I have again carefully examined my specimen, but what can be said from a single pale Redpoll in worn breeding plumage? All that can be remarked with certainty is that it is not *A. exilipes*, and if it represents no special race of its own, it will have to be unconditionally united with true *A. linaria*. However, even taking into account its very abraded condition, it appears to me *unusually* pale; but future material will decide.

I still maintain that *A. holbællii* is a fair local race of *A. linaria* especially characteristic of islands and coast districts during the breeding season, and easily recognizable by the elongation of the terminal portion of its bill, and the generally larger size. It will not do to explain this difference in the length of the bill as due to season, for we have before us both forms in all plumages and collected in all seasons. True, the bills of these birds are very often worn very short, but that takes place in both forms; specimens of *A. holbællii* with very worn bills may easily be mistaken for typical *A. linaria*, but the latter does not assume such a long bill as *holbællii*.

A good series of specimens from northern Japan, eight of which are collected by Mr. Th. Blakiston, forming part of that magnificent collection which two years ago he with unequalled liberality presented to the National Museum, point very strongly in favor of my opinion. Among the specimens before me are some of those upon which Swinhoe based the statement of two forms occurring in Yesso (*Ægiothus borealis* and *linaria*, *Ibis*, 1874, p. 160). After carefully examining and comparing my material I have come to the conclusion that they all belong to one form only, viz., *Acanthis linaria holbællii*. Some of the specimens have rather short bills—though longer than the average *A. linaria vera*—but on close examination it will be found that the base of the bill is inclosed in a horny layer of a dead look and ready to scale off, from which the fresh and new but yet short tip is protruding; in other words, they are in the process of shedding the outer layers of the horny covering of the bill. The whole

process is finely illustrated by this series of Japanese birds. It seems as if it is also connected with the change of the color of the bill from yellow to black. As yet the phenomenon of the renewal of the bill has received very little attention from ornithologists, notwithstanding its great importance.

Not knowing of any other species of Redpoll having been assigned to Japan based on *unquestionable* identification I can at present only regard *A. holbællii* as entitled to a place in its fauna. It is reasonable, however, to expect that both *A. linaria* and *exilipes* in winter may visit the northern islands.

MEASUREMENTS.

I. *Acanthis cabaret* ♀ from Italy.

Florence Museum No.	Collector.	Sex and Age.	LOCALITY.	DATE.	Wing.	Tail-f.	Bill from Nostril.	Expanse of Tail.
2554	♀ ad.	Colico, Italy.	Oct. 19, 1885.	68	51	6.5	9

II. *Acanthis cabaret* from Great Britain.

(a) Males with red on throat and breast.

U.S. Nat. Museum No.	Collector.	Sex ad.	Locality.	Date.	Wing.	Tail-f.	Bill from Nostril.	Expanse of Tail.
102976	Swaysland.	♂ ad.	Hove, Sussex.	Oct. 9, 1884.	72	54	7	11
102977	"	♂ ad.	Lancing, "	Nov., 1883.	69	54	7	9
107044	Seeböhm.	♂ ad.	Brighton.	Nov., 1880.	67	51	7	8
107047	T. Gunn.	♂ ad.	Heigham, Norwich.	March, 1875.	68	50	7	8
108283	T. Thoms.	♂ ad.	Newcastle-on-Tyne.	Feb. 8, 1873.	71	53	7.5	8
Average measurements of 5 specimens								69 52 7.3 9

(b) Males without red on throat and breast.

U.S. Nat. Museum No.	Collector.	Sex ad.	Locality.	Date.	Wing.	Tail-f.	Bill from Nostril.	Expanse of Tail.
102979	Swaysland.	♂ ad.	Brighton.	Nov., 1883.	71	53	7	8
108284	"	♂ ad.	Oatlands.	Dec. 8, 1875.	73	56	7.5	10
109227	"	♂ ad.	Cookham.	Dec. 2, 1879.	71	52	7	10

Average measurements of 3 specimens 72 54 7.2 9

Average of 8 ♂♂ with and without red 70 53 7.25 9

(c) FEMALES.

U.S. Nat. Museum No.	Collector.	Sex ad.	Locality.	Date.	Wing.	Tail-f.	Bill from Nostril.	Expanse of Tail.
109223	Swaysland.	♀ ad.	Atmouth, Devon.	Oct. 28, 1882.	68	50	7	10
102970	"	♀ ad.	Lancing, Sussex.	Nov., 1883.	66	52	7	9
109224	"	♀ ad.	Atmouth, Devon.	Oct. 28, 1882.	68	51	7	10
107043	Seeböhm.	♀ ad.	Norwich.	Nov., 1872.	66	48	7	8
107045	"	♀ ad.	Heigham.	Oct., 1873.	65	51	7	8
108285	"	♀ ad.	Oatlands.	Dec. 8, 1875.	66	54	7	11

Average measurements of 6 females 66 51 7 9

(d) SPECIMENS NOT SEXED.

(a) With red on throat and breast.

U.S. Nat. Museum No.	Collector.	ad.	Locality.	Date.	Wing.	Tail-f.	Bill from Nostril.	Expanse of Tail.
102978	Swaysland.	ad.	Brighton.	Nov., 1883.	71	53	7	10
109225	"	"	"	Oct., 1883.	74	53	8	-
109226	"	"	Cookham.	Dec. 29, 1882.	70	53	7.5	9

(b) Without red on throat and breast.

96599	Blakiston.	ad.	Kent.	Oct., 1862.	68	52	7	9
96600	"	"	"	Feb., 1863.	71	52	7.5	8
107045	Seebohm.	"	Brighton.	Nov., 1881.	70	54	7	9
109232	"	"	"	" 1883.	68	52	7	9
109237	"	"	"	" 1882.	68	53	8	—
109328	"	"	"	" "	68	53	7	12
109244	"	"	"	" "	68	53	7	10
109240	"	"	"	Oct., 1883.	70	54	7.5	10
109231	"	"	"	" "	63	—	—	—
109233	"	"	"	" "	65	52	7	11
109234	"	"	"	" "	68	51	7	10
109235	"	"	"	" "	65	49	7	8
109236	"	"	"	" "	67	50	7	10
109239	"	"	"	" "	65	49	7.5	11
109240	"	"	"	" "	68	—	7	—
109241	"	"	"	Oct. 20, 1883.	71	53	7	10
109242	"	"	"	Oct. 22, 1883.	68	53	7	11
109243	"	"	"	Oct. 26, 1883.	66	51	7	11
109245	"	"	Hampstead.	Nov. 12, 1882.	65	51	7	10
109246	"	"	"	Nov. 10, 1882.	67	—	7.5	—
109247	"	"	"	" "	70	55	7.5	—
109228	"	"	Cookham.	Dec. 29, 1882.	65	52	7	10
109229	"	"	"	Dec. 2, 1882.	65	—	7	—

Average measurements of 26 specimens 68 52 7.2 10

III. *Acanthis holbællii* from Japan.

(a) MALES.

96374	Blak. 1148.	♂ ad.	Hakodadi, Yesso.	March.	75	58	8.5	8*
91543	" 2910.	♂ ad.	Sapporo,	June.	72	55	9	8*
96372	" 1147.	♂ ad.	Hakodadi,	March.	73	55	8	9*
96373	" 1143.	♂ ad.	" "	"	75	58	9	11†
96370	" 1138.	♂ ad.	" "	February.	73	58	8	10†
91439	Jouy, 798.	♂ ad.	Tate Yama, Hondo.	Nov. 21, 1822.	75	58	9	11†

Average dimensions of six males 74 57 8.6 10†

(b) FEMALES.

107039	Blak. 1144.	♀ ad.	Hakodadi, Yesso.	March.	72	55	8	9
91544	" 2911.	♀ ad.	Sapporo,	June.	—	55	8	—
96341	" 1141.	♀ ad.	Hakodadi,	March.	72	54	7	9

THE REDISCOVERY OF BACHMAN'S WARBLER,
HELMINTHOPHILA BACHMANI (AUD.),
IN THE UNITED STATES.

BY GEORGE N. LAWRENCE.

MR. CHARLES S. GALBRAITH, of West Hoboken, N. J., an experienced taxidermist and collector, made a collection of birds last spring (1886) in Louisiana, near Lake Pontchartrain. I did not see him after his return until October. Any specimens he obtains, which he is not familiar with, he always thoughtfully

* With red on throat and breast.

† Without red on throat and breast.

retains until he can submit them to me for identification. This time, among others, were two species of especial interest. The most important one, which Mr. Galbraith kindly presented to me, proves to be an example of the rare Bachman's Warbler, which for many years has been most assiduously and vainly searched for.

No specimen of it has been obtained in the United States since the types discovered by Dr. Bachman in 1833, near Charleston, S. C., and described by Mr. Audubon. These are now in the National Museum at Washington. A search in the proper locality would probably result in finding more of this rare species, as was the case in Mr. Brewster's persistent pursuit of Swainson's Warbler.

The specimen differs from Audubon's plate and description of the male (octavo edition) in having the face light yellow, and the under plumage pale yellow, with a greenish shade, instead of deep gamboge yellow, as in the plate; the black patch on the neck in front and upper part of the breast is just as represented in the plate; the crown, occiput, and hind-neck are bluish ash, with a black band on the anterior part of the crown, about one-quarter of an inch in width; in Audubon's plate of the male, the entire crown is black. In the colors of all the other parts of its plumage, and in its measurements, it agrees with the description given by Mr. Audubon.

Mr. Audubon describes the female as "considerably smaller than the male, and differs only in having the tints fainter, the forehead yellowish-green, and the fore-neck dusky."

In the plate the coloring of the under plumage of the female is nearly as bright a yellow as in the male.

As the coloring of this specimen was somewhat different from Mr. Audubon's plate, I wrote to Mr. Ridgway, pointing out wherein they differed, and requesting him to let me know whether the male (type) was accurately represented in the plate. He replied as follows: "Your announcement of a specimen of Bachman's Warbler from Louisiana is a great surprise to me, as it doubtless will be to ornithologists in general. Your bird corresponds in every particular with the male described and figured by Audubon, which is in our collection. The top of the head is dull ash gray, bordered anteriorly by a black band next to the yellow of the forehead, and the yellow of the face and under-

parts are of a dull yellow shade (oil yellow I would call it), exactly as you describe the specimen in your possession. Audubon's plate is very faulty in several particulars."

Mr. Galbraith obtained only this specimen, and has no recollection of seeing another, but if he had—not knowing its desirability—he said, if a more highly plumaged bird had been in sight, it would have been shot in preference.

The other specimen referred to above is Swainson's Warbler (*Helinaia swainsoni*), of which he procured about three dozen examples, but he had parted with all for millinery purposes, except the one retained for me. The others are probably by this time adorning the hats of some of the better part of creation—the fair wearers not being aware of their great rarity.

It would seem as if this species was not at all uncommon in the locality in which Mr. Galbraith collected, since he got so many specimens of it. He knew nothing of their value, and they were collected indiscriminately with other birds suited to his business as a taxidermist.

According to Mr. Brewster, in South Carolina it required to be very carefully searched for in special localities. With a great variety of birds, Mr. Galbraith obtained a large number of Prothonotary Warblers, as well as Orange-crowned and Worm-eating, showing the locality to be a favorite resort of Swamp Warblers.

THE BIRDS OF THE WEST INDIES, INCLUDING THE BAHAMA ISLANDS, THE GREATER AND THE LESSER ANTILLES, EXCEPTING THE ISLANDS OF TOBAGO AND TRINIDAD.

BY CHARLES B. CORY.

[Continued from Vol. III, p. 472.]

FAMILY FALCONIDÆ.

GENUS *Pandion* SAV.

Pandion SAVIGNY, "Descr. de l'Egypt, Ois. p. 95, 1809."

Pandion haliaetus carolinensis (GMEL.).

Falco carolinensis "GMEL. Syst. Nat. I, p. 263 (1788)."

Falco cayennensis "GMEL. Syst. Nat. I, p. 263 (1788)."

Pandion carolinensis GOSSE, Bds. Jam. p. 19 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859) (Bahamas).—BREWER, *ib.* p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 152 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 222 (1865); *ib.* J. f. O. 1871, p. 364 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 158 (1878) (Porto Rico); *ib.* J. f. O. 1878, p. 158 (Porto Rico).

Pandion haliaetus LEMB. Aves Cuba, p. 12 (1850).—LAWR. Pr. U. S. Nat. Mus. I, p. 65 (1878) (Dominica); *ib.* p. 194 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 273 (Grenada).—CORY, Bds. Bahama I, p. 131 (1881).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, Bds. Haiti & San Domingo, p. 125 (1885).—WELLS, List Bds. Grenada, p. 6 (1886).

Pandion haliaetus carolinensis CORY, List Bds. W. I. p. 22 (1885).

Common throughout the Bahamas and Antilles.

GENUS Circus LACÉP.

Circus LACÉPÈDE, Mém. de l' Inst. III, p. 506, 1801.

Circus hudsonius (LINN.).

Falco hudsonius LINN. Syst. Nat. I, p. 128 (1766).

Circus cyaneus D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 19 (1840).
Circus hudsonicus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—CORY, List Bds. W. I. p. 22 (1885).

Circus hudsonius GUNDL. Repert. Fisico-Nat. Cuba, I, p. 224 (1865).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 65 (1867) (Bahamas).—GUNDL. J. f. O. 1871, p. 369 (Cuba).

Circus cyaneus var. *hudsonius* CORY, Bds. Bahama I, p. 128 (1880).
Cuba and Bahamas.

GENUS Rupornis KAUP.

Rupornis KAUP, Classif. Säug. u. Vög. 1844.

Rupornis ridgwayi CORY.

Rupornis ridgwayi CORY, Journ. Bost. Zool. Soc. II, p. 46 (1883); *ib.* Auk, I, p. 4 (1884); *ib.* Bds. Haiti & San Domingo, p. 121 (1885); *ib.* List Bds. W. I. p. 22 (1885).

SP. CHAR. Male:—Above slaty brown; shafts of the feathers of the head and upper back dark brown; underparts slaty, faintly touched with

rufous on the belly and abdomen; chin dull white; shoulders and thighs rufous, the latter much the brighter, and faintly pencilled with indistinct pale lines; wings and tail dark brown, imperfectly banded with dull white, and showing various shadings of a rufous tinge; all the outer primaries imperfectly banded with white, gradually becoming fainter on the outer webs, until just perceptible on the sixth, the rest of the primaries and secondaries with the outer web dark brown, and the inner webs thickly banded with white, showing traces of rufous.

Length, 13.75; wing, 9.15; tail, 6.; tarsus, 2.75; bill, 1.20.

Female:—Top of the head and neck brownish ash, becoming darker on the back; the feathers of the back and tertaries edged with rufous; underparts dark rufous, the feathers narrowly banded with white; thighs showing the rufous much brighter, the feathers banded with very fine pale lines; crissum white, with rufous bands near the tips; under part of breast slaty, shading into dull white on the throat; the shafts of the feathers on the throat and breast dark brown, showing in hair-like lines; the rest as in the male.

Length, 14.50; wing 10.; tail, 6.45; tarsus, 2.65; bill, 1.25.

Immature Male:—In general appearance much like *Buteo pennsylvanicus*. Underparts dull white, the feathers slightly tinged with rufous, the centre of the surface feathers showing a stripe of brown, giving the body a striped appearance; thighs rufous, but paler than in the adult; above much resembling the adult; the white wing- and tail-bands replaced by rufous bands on the terminal half of the feathers.

HABITAT. San Domingo.

Mr. Gurney mentions *Rupornis magnirostris* from the Island of Martinique (*Ibis*, 1876, p. 482), but says that it might have possibly belonged to one or the other of the two Central American forms, which at that time had not been separated from it.

GENUS *Buteo* CUVIER.

Buteo "Cuv. Leç. d'Anat. Comp. I, tabl. ii, Ois. 1799-1880."

Buteo borealis (GMEL.).

Falco borealis GMEL. Syst. Nat. II, p. 226 (1788).

Buteo borealis GOSSE, Bds. Jam. p. 11 (1847).—LEMB. Aves Cuba, p. 18 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 203 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 151 (Jamaica).—GUNDL. Repert. Fisi-co-Nat. Cuba I, p. 223 (1865).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 64 (1867) (Bahamas).—GUNDL. J. f. O. 1871, p. 365 (Cuba); *ib.* 1878, p. 158 (Porto Rico); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p.

159 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 131 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 22 (1885).

Recorded from Cuba, Jamaica, Porto Rico, and Bahamas. Mr. J. H. Gurney writes me he has an example of this species from Haiti.

Buteo latissimus (WILS.).

Falco latissimus WILS. Am. Orn. I, p. 92 (1812).

Buteo latissimus LEMB. Aves Cuba, p. 19 (1850).—CORY, Ibis, 1886, p. 473 (St. Vincent).

Buteo pennsylvanicus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 223 (1865); *ib.* J. f. O. 1871, p. 366 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 194 (1878) (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 273 (Grenada).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 160 (1878) (Porto Rico); *ib.* J. f. O. 1878, p. 158 (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—LISTER, Ibis, 1880, p. 43 (St. Vincent).—CORY, List Bds. W. I. p. 22 (1885).—WELLS, List Bds. Grenada, p. 6 (1886).

Common winter visitant, and possible resident in the Lesser Antilles.

Recorded from Cuba, Porto Rico, and Lesser Antilles.

GENUS Accipiter BRISS.

Accipiter BRISSON, Orn. I, p. 310, 1760.

Accipiter gundlachi LAWR.

Astur cooperi LEMB. Aves Cuba, p. 17 (1850).—CAB. J. f. O. 1854.

Nisus pileatus LEMB. Aves Cuba, Suppl. p. 125 (1850).

Accipiter cooperi BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).

Accipiter pileatus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (?)

Accipiter mexicanus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).

Accipiter gundlachi LAWR. Ann. Lyc. N. Y. 1862, p. 252.—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 224 (1865).—SCL. & SALV. Nom Avium Neotr. p. 120 (1873).—SHARPE, Cat. Bds. Brit. Mus. I, p. 137 (1874).—CORY, List Bds. W. I. p. 22 (1885).

Cooperastur gundlachi GRAY, Handl. Bds. I, p. 33 (1869).

Nisus cooperi var. *gundlachi* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 22 (1874).

Nisus gundlachi RIDGW. Studies Am. Falc. p. 104 (1876).

“*Adult male*:—Front, crown, and occiput sooty-black; upper plumage dull bluish ash, the feathers of the back with brownish

margins: tail of the same color as the back, partly tinged with dull rufous and crossed with four brown bars, three of which are imperfect, being but little developed on the outer webs, the outer bar, however, crosses both webs, and is narrowly tipped with white; quill feathers brown, having the shafts, as are also those of the tail-feathers, reddish brown; cheeks dusky ash; space forward of the eye pale dull rufous; a line of whitish feathers runs along the edge of the crown and extends over the eye; throat ashy white tinged with rufous; sides of the neck, upper part of the breast and a band running to the hind neck, grayish ash; lower portion of the breast and upper part of the abdomen rufous, the feathers very narrowly edged with dull white, lower part of abdomen of a paler rufous, with transverse bars of dull white; long feathers of the sides grayish ash tinged with rufous and destitute of bars or spots; sides just above the junction of the tail plain rufous; thighs of a bright but rather pale rufous, the feathers having darker sub-marginal ends, terminating with very narrow edgings of dull white; under wing-coverts and axillars bright rufous barred with white; the feathers of the throat, breast and sides have their shafts dark brown; upper tail-coverts grayish ash, lower white; bill horn color, with a whitish mark on the tooth and also on the edge of the lower mandible near its base; legs greenish yellow.

"Length about 18 inches; wing from flexure 9 $\frac{1}{2}$; tail 7 $\frac{1}{2}$; tarsus 2 $\frac{1}{2}$."
(LAWR., orig. descr., l. c.)

HABITAT. Cuba.

Accipiter fringilloides VIG.

Accipiter fringilloides VIG. Zool. Journ. III, p. 434 (1828).—DENNY, P. Z. S. 1847, p. 38.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—GRAY, Handl. Bds. I, p. 32 (1869).—GUNDL. J. f. O. 1871, p. 368.—SCL. & SALV. Nom. Avium Neotr. p. 120 (1873).—SHARPE, Cat. Bds. Brit. Mus. I, p. 135 (1874).—CORY, Bds. Haiti & San Domingo, p. 120 (1885); *ib.* List Bds. W. I. p. 22 (1885).

Nisus fringilloides D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 18 (1840).—LEMB. Aves Cuba, p. 128 (1850).—RIDGW. Studies Am. Falc. p. 117 (1876).

Nisus fuscus LEMB. Aves Cuba, p. 128 (1850).—GUNDL. J. f. O. 1854.—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881).

Accipiter fuscus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).

Nisus fuscus var. *fringilloides* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 223 (1874).

SP. CHAR. Female:—Resembles *Accipiter fuscus*, but plumage much paler; above brown, the concealed portions of the feathers showing much white; concealed feathers of the back regularly marked with broad spots of white; tail pale brown, showing five somewhat indistinct

bands of darker brown; under surface of tail dull white, regularly banded with brown; breast and belly white, the shafts of the feathers dark brown, showing hair-like lines over the whole surface; these lines are in many cases bordered with pale brown, giving the appearance of arrow-shaped markings; under tail-coverts white; quills brown, barred with white on the inner webs; under surface of wings white, barred with brown.

Length, 11.50; wing 7.; tail, 5.50; tarsus, 1.75.

HABITAT. Cuba, Haiti, and San Domingo.

Dr. Gundlach has a fine adult male of this species in his collection. It is smaller than the female, as would be expected, and has the cheeks and sides of the throat tinged a beautiful orange brown, the color also showing in the breast marking.

The female described was killed a few miles from Port au Prince, Haiti, during March, 1881. It was the only one seen.

Accipiter velox (WILS.).

Falco velox "WILS. Am. Orn. V, p. 116 (1812)."

Accipiter fuscus BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859) (Bahamas).—CORY, Bds. Bahama I. p. 128 (1880); *ib.* List Bds. W. I. p. 22 (1885).

Accidental in the Bahamas.

GENUS Urubitinga LESS.

Urubitinga LESSON, Rev. Zool. 1839, p. 132.

Urubitinga anthracina (LICHT.).

Falco anthracinus LICHT. in Mus. Berol. und Nitzsch. Ptery. p. 83 (1840).

Morphnus urubitinga LEMB. Aves Cuba, p. 14 (1850).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).

Hypomorphus gundlachi BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).

Hypomorphus gundlachi GUNDL. Repert. Fisico-Nat. Cuba, I, p. 223 (1865); *ib.* J. f. O. 1871, p. 365 (Cuba).

Urubitinga anthracina SHARPE, Cat. Bds. Brit. Mus. I, p. 215 (1874) (Cuba).—LAWR. Pt. U. S. Nat. Mus. I, p. 194 (1878) (St. Vincent).—LISTER, Ibis, 1880, p. 43 (St. Vincent).—CORY, List Bds. W. I. p. 22 (1885).—WELLS, List Bds. Grenada, p. 6 (1886) (?) —CORY, Ibis, 1886, p. 473 (St. Vincent).

Records from Cuba, Jamaica, St. Vincent, and Grenada (?)

GENUS **Falco** LINN.

Falco LINNÆUS, Syst. Nat. I, p. 124, 1766.

Falco peregrinus anatum (BONAP.).

Falco anatum Bp. Geog. & Comp. List, p. 4 (1834).—GOSSE, Bds. Jam. p. 16 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859) (Bahamas); *ib.* BREWER, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, pp. 152, 304 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 225 (1865); *ib.* J. f. O. 1871, p. 371 (Cuba); *ib.* 1878, p. 158 (Porto Rico); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 161 (1878) (Porto Rico).

Falco peregrinus LEMB. Aves Cuba, p. II (1850).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 64 (1867) (Bahamas).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, List Bds. W. I. p. 22 (1885).

Falco communis SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 586 (St. Bartholomew).—CORY, Bds. Bahama I. p. 129 (1880).

Falco communis var. *anatum* LAWRENCE. Pr. U. S. Nat. Mus. I, p. 487 (1878) (Antigua); *ib.* p. 240 (Barbuda).

Many records from the Antilles; specimens have been taken in the Bahamas, Cuba, Jamaica, Antigua, Barbuda, Porto Rico, and St. Bartholomew.

Falco columbarius LINN.

Falco columbarius LINN. Syst. Nat. I, 10th ed. p. 90 (1758); *ib.* 12th ed. p. 128 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 23 (1840).—GOSSE, Bds. Jam. p. 17 (1847).—SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 601 (Porto Rico).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).—CORY, Bds. Haiti & San Domingo, p. 123 (1885); *ib.* List Bds. W. I. p. 22 (1885).

Hypotriorchis columbarius BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—SCL. P. Z. S. 1861, p. 79 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 203 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 152 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 225 (1865); *ib.* J. f. O. 1871, p. 372 (Cuba); *ib.* 1878, p. 158 (Porto Rico); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 162 (1878) (Porto Rico).

Æsalon columbarius WELLS, List Bds. Grenada, p. 6 (1886).

Recorded from San Domingo, Porto Rico, Cuba, Jamaica, Grenada, and St. Thomas.

Falco sparverius LINN.

Falco sparverius LINN. Syst. Nat. I, 10th ed. p. 90 (1758); *ib.* 12th ed. p. 128 (1766).—GMEL. Syst. Nat. I, p. 284 (1788).—LATH. Ind. Orn.

p. 42 (1790).—VIEILL. Enc. Méth. III, p. 1234 (1820).—WAGL. Isis, 1831, p. 517.—AUD. Bds. Am. I, p. 94 (1839).—CASSIN, in Baird's Bds. N. Am. p. 13 (1860).—SALV. P. Z. S. 1867, p. 158.—SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 586.—SCHLEG. Rev. Accipitr. p. 45 (1873).—COUES, Key N. Am. Bds. p. 537 (1884).—CORY, Bds. Bahama I. p. 103 (1880); *ib.* List Bds. W. I. p. 22 (1885).

Falco noveboracensis GMEL. Syst. Nat. I, p. 284 (1788).

Tinnunculus sparverius VIEILL. Ois. Am. Sept. pls. XII, XIII (1807).—BP. Conspl. I, p. 27 (1850).—CASSIN, Pr. Acad. Nat. Sci. Phila. 1855, p. 278.—STRICKL. Orn. Syn. I, p. 99 (1855).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 105 (1859); *ib.* BREWER, p. 306 (1860).—SCL. & SALV. Nom. Avium Neotr. p. 121 (1873).—GUNDL. J. f. O. 1878, p. 158 (?).—GURNEY, List Bds. Prey, p. 98 (1884).—WELLS, List Bds. Grenada, p. 6 (1886).

Cerchneis sparverius BP. List Eur. & N. Am. Bds. p. 5 (1838).

Falco isabellinus SWAINS. An. Menag. p. 281 (1838).

Tinnunculus phalæna LESS. Mam. et Ois. p. 178 (1847).

Pacilornis sparverius KAUP, Mon. Falc. Cont. Orn. p. 53 (1850).—GRAY, Handl. Bds. I, p. 23 (1869).

Tinnunculus sparverius var. *isabellinus* RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 149.—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 171 (1874).

Cerchneis sparveria SHARPE, Cat. Bds. Brit. Mus. I, p. 437 (1874).

Cerchneis isabellina SHARPE, Cat. Bds. Brit. Mus. I, p. 441 (1874).

Falco (Tinnunculus) sparverius BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 169 (1874).

Tinnunculus isabellinus GURNEY, Ibis, 1881, p. 561; *ib.* List Bds. Prey, p. 99 (1884).

Falco sparverius isabellinus COUES, Key N. Am. Bds. p. 538 (1884).

Several forms of this species occur in the West Indies, but vary much in different localities. I have a specimen in my cabinet from San Domingo which is apparently true *F. sparverius*.

Falco dominicensis GMEL.

Falco dominicensis GMEL. Syst. Nat. I, p. 288 (1788).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 90 (1866).

Falco sparverius D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 25 (1840).—SALLÉ, P. Z. S. 1857, p. 231.—SUNDEV. Oefv. Af. K. Vet. Akad. För. 1869, p. 586.

Tinnunculus dominicensis STRICKL. Orn. Syn. p. 100 (1855).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 225 (1865).—GRAY, Handl. Bds. I, p. 24 (1869).—GUNDL. J. f. O. 1871, p. 373; *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 163 (1878).—GURNEY, List Bds. Prey, p. 99 (1884).

Tinnunculus sparverius CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 374.

Falco leucophrys RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 147.

Tinnunculus leucophrys RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 149.—SCL. & SALV. Nom. Avium Neotr. p. 121 (1873).—BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 161 (1874).

Tinnunculus sparverius var. *dominicensis* RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 149.

Cerchneis leucophrys SHARPE, Cat. Bds. Brit. Mus I, p. 442 (1874).

Falco sparverius var. *dominicensis* BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 167 (1874).

Tinnunculus sparverius (?) CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881).

Falco sparverius isabellinus CORY, Bds. Haiti & San Domingo, p. 124 (1875).

Falco sparverius dominicensis CORY, List Bds. W. I. p. 22 (1884).

SP. CHAR. *Male*:—Top of head slate color; forehead whitish; throat white; a maxillary and auricular black stripe; breast rufous; back dark rufous brown; tail rufous brown, tipped with white, and having a sub-terminal band of black; outer web of outer tail-feather white; wing-coverts slate color; abdomen and belly white; a patch of black on the side of the neck.

Female:—Top of head slate color, showing a patch of rufous; entire upper parts rufous brown, banded with dull black; underparts very pale rufous, delicately streaked and spotted with brown; throat white.

Length, 10.; wing, 7.; tail, 5. tarsus, 1.20.

HABITAT. Cuba? Haiti, San Domingo, and Porto Rico.

Falco sparverioides VIG.

Falco sparverioides VIG. Zool. Journ. III, p. 436 (1828).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 30 (1840).—RIDGW. Pr. Acad. Nat. Sci. Phila. 1870, p. 149.—COUES, Key N. Am. Bds. p. 538 (1884).

Tinnunculus sparverioides GRAY, Gen. Bds. I, p. 21 (1844).—BP. Conspl. I, p. 27 (1850).—STRICKL. Orn. Syn. p. 100 (1855).—LAWR. Ann. Lyc. N. Y. 1860, p. 247.—BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 306 (1860).—SCL. & SALV. Nom. Avium Neotr. p. 121 (1873).—GURNEY, Ibis, 1881, p. 565; ib. List Bds. Prey, p. 100 (1884).

Pacilornis sparverioides KAUP, Contr. Orn. p. 53 (1850).—BP. Rev. Mag. Zool. 1854, p. 537.—GRAY, Handl. Bds. I, p. 24 (1869).

Cerchneis sparverioides SHARPE, Cat. Bds. Brit. Mus. I, p. 443 (1874).

Falco (Tinnunculus) sparverioides BD. BWR. & RIDGW. Hist. N. Am. Bds. III, p. 162 (1874).

Falco sparverius sparverioides CORY, List Bds. W. I. p. 22 (1885).

SP. CHAR. *Male*:—Above entirely slate blue in the adult bird; most specimens seen have the back chestnut brown mixed with slaty; rump, upper tail-coverts, and tail chestnut brown; tail with a sub-terminal

band of black; inner secondaries gray; sides of the face and throat white; a streak of black on sides of throat; slight mark on the nape and a patch near the ear-coverts black; breast pale chestnut, and becoming whitish, tinged with chestnut on the belly and vent; flanks showing a grayish tinge, and a few faint black spots.

Length (skin), about 10; wing, 6.50; tail, 4.70; tarsus, 1.50; bill, .60.

HABITAT. Cuba.

Falco caribbaeum GMEL.

Falco caribbaeum GMEL. Syst. Nat. I, p. 284 (1788).

Falco æsalon, var. **B**. LATH. Ind. Orn. I, p. 49 (1790).

Cerchnis caribbaeum (?) SHARPE, Cat. Bds. Brit. Mus. I, p. 442 (1874).

Tinnunculus sparverius var. *antillarum* LAWRENCE. Pr. U. S. Nat. Mus. I, p. 487 (1878).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).

Tinnunculus antillarum GURNEY, Ibis, 1881, p. 547.

Tinnunculus caribbaeum GRISDALE, Ibis, 1882, p. 491.—GURNEY, List Bds. Prey, p. 99 (1884).—RIDGWAY. Pr. U. S. Nat. Mus. VII, p. 172 (1884).

Falco sparverius caribbaeum CORY, List Bds. W. I. p. 22 (1885); ib. Ibis, 1886, p. 474.

SP. CHAR. Male.—General plumage above chestnut brown, heavily banded with black; forehead grayish; top of head chestnut brown, showing faint lines of black; underparts dull white, tinged with rufous on the breast, and spotted and streaked with black, heaviest on the sides of the body; primaries heavily blotched with white on the inner webs; under surface of tail brown, showing numerous bands of black, a wide subterminal band of black, and narrowly tipped with grayish white.

Length (skin) 9.50; wing, 6; tail, 4.50; tarsus, 1; bill .55.

HABITAT. Lesser Antilles.

GENUS Elanoides VIEILL.

Elanoides "VIEILLOT, Nouv. Dict. XXIV, p. 101, 1818. Type *Falco furcatus* = *F. forficatus* LINN."

Elanoides forficatus (LINN.).

Falco forficatus LINN. Syst. Nat. I, p. 89 (1758).

Nauclerus furcatus GOSSE, Bds. Jam. p. 19 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 204 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 153 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 225 (1865); ib. J. f. O. 1871, p. 370 (Cuba).—A. & E. NEWTON, Handb. Jamaica, p. 110 (1881).

Elanoides forficatus CORY, List Bds. W. I. p. 22 (1885).

Recorded from Cuba and Jamaica.

GENUS ***Rostrhamus*** LESS.

Rostrhamus LESSON, Traité d'Orn. p. 55, 1831.

***Rostrhamus sociabilis* (VIEILL.).**

Herpetotherus sociabilis VIEILL. Nouv. Dict. XVIII, p. 318 (1818).

Rostrhamus sociabilis D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 15 (1840).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 222 (1865); *ib.* J. f. O. 1871, p. 362 (Cuba).

Rostrhamus hamatus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).

Rosthramus sociabilis CORY, List Bds. W. I. p. 22 (1885).

Accidental in Cuba.

GENUS ***Regerhinus*** KAUP.

Regerhinus KAUP, Mus. Senck. III, p. 262, 1845.

***Regerhinus wilsonii* (CASS.).**

Cymindis wilsonii CASSIN, Journ. Acad. Nat. Sci. Phila. new ser. I, p. 21, pl. vii (1847).—BP. Conspl. I, p. 21 (1850).—LAWR. Ann. Lyc. N. Y. VII, p. 257 (1860).—SCL. & SALV. Nom. Avium Neotr. p. 122 (1873).

Regerhinus wilsonii KAUP, Arch. f. Naturg. 1850, p. 40.—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).—GUNDL. J. f. O. 1871, p. 360.—RIDGW. Studies Am. Falc. p. 159 (1876).—CORY, List Bds. W. I. p. 23 (1885).

Cymindis uncinatus LEMB. Aves Cuba, Suppl. (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860).

Regerhinus uncinatus CAB. J. f. O. 1854, p. 80.

Regerhinus wilsoni GRAY, Handl. Bds. I, p. 28 (1869).

Leptodon wilsoni SHARPE, Cat. Bds. Brit. Mus. I, p. 333 (1874).

“*Male*:—Body above entirely dark brown, paler on the head; beneath white, every feather from the chin to the under tail-coverts crossed by several bars of bright rufous, and these colours extending upwards into a collar around the neck; 4th, 5th, and 6th primaries longest and nearly equal, external webs nearly black, internal webs of outer primaries white at base, and for nearly half their length, remaining part reddish inclining to chestnut; every primary (on its inner web) having two irregularly shaped black marks, and tipped with black. Tail of the same colour as the back, but paler, white at base, and crossed by about four broad bars, which are nearly black, the second bar from the tip accompanied by a narrow rather indistinct bar of rufous; tip of tail narrowly edged with white. Bill very large, larger than that of any other species of

this genus, yellowish white, inclining to bluish horn-colour at base. Total length 17 inches.

"*Female*:—Body above entirely light bluish ash-colour, paler on the head, beneath barred with the same, the bars having a ferruginous tinge" (CASSIN, I. c.).

HABITAT. Cuba.

Regerhinus uncinatus (TEMM.).

Falco uncinatus TEMM. Pl. Col. 103, 104, 105 (1824).

Cymindis uncinatus LESS. Man. d'Orn. I, p. 91 (1828).—GRAY, Gen. Bds. I, p. 25 (1844).—BP. Conspl. I, p. 21 (1850).—BURM. Th. Bras. II, p. 108 (1856).—LÉOT. Ois. Trinid. p. 36 (1866).—GRAY, Handl. Bds. I, p. 136 (1869).—PELZ. Orn. Bras. pp. 5, 398 (1871).—SCHLEG. Rev. Accipitr. p. 136 (1873).—SHARPE, P. Z. S. 1873, p. 419.—SCL. & SALV. Nom. Avium Neotr. p. 122 (1873).—WELLS, List Bds. Grenada, p. 6 (1886).

Falco vitticaudus MAX. Beitr. III, p. 178 (1830).

Cymindis cuculoides SWAINS. Classif. Bds. II, p. 209 (1837).

Regerhinus uncinatus KAUP, Mus. Senckenb. III, p. 262 (1845).—CAB. in Schomb. Reis. Guian. III, p. 736 (1848).—GUNDL. J. f. O. 1871, p. 284.—CORY, List Bds. W. I. p. 23 (1885).

Rostrohamus uncinatus STRICKL. Orn. Syn. p. 136 (1855).

Cymindis pucherani LÉOT. Ois. Trinid. p. 40 (1866).—GRAY, Handl. Bds. I, p. 25 (1869).—FINSCH, P. Z. S. 1870, p. 557.

Cymindis boliviensis BURM. P. Z. S. 1868, p. 635.—GRAY, Handl. Bds. I, p. 28 (1869).

Cymindis vitticaudus PELZ. Orn. Bras. pp. 6, 398 (1871).

Leptodon uncinatus SHARPE, Cat. Bds. Brit. Mus. I, p. 330 (1874).

"*Young*:—Above brown, the dorsal feathers and wing-coverts margined with pale rufous, the upper tail-coverts broadly barred and tipped with buff; quills dark brown, with rufous-buff tips, the primaries barred with dark brown above, the secondaries more or less distinctly barred with rufous or rufous buff; the under surface of the wing ashy brown, barred with darker brown, the bases of the feathers creamy buff, washed with rufous near the tips; tail ashy brown, tipped with whitish, barred across with dark brown bars, the interspaces on the inner web creamy buff, more or less mottled with brown above, at the base barred above and below with creamy buff, like the upper tail-coverts; crown of the head dark brown, with no pale margins; sides of the face and a collar around the neck white, slightly spotted with pale brown, the ear-coverts inclining to bluish grey; under surface of body white, the throat indistinctly spotted, and the breast narrowly barred with pale brown, the bars almost linear on the under tail-coverts, those on the

thigh-feathers broader and more rufous; under wing-coverts and axillaries white, barred with pale rufous. Total length 17 inches, culmen 1-65, wing 10-4, tail 8-6, tarsus 1-45.

"Another specimen still quite young, agrees with the foregoing in the coloration of the wings and tail, but has the edgings to the feathers of the upper surface very much broader, and a broad white tip to the tail; the sides of the face and collar round the neck are creamy white, without any brown spots; the under surface of the body is also more free from spots, with here and there a feather appearing broadly barred with tawny rufous, indicative of the next change in the plumage.

"*Mature*:—Altogether different from the preceding stage. Above leaden brown, the head more slaty, the sides of the face and chin clear slaty blue; around the neck a rufous collar; quills brown, with narrow apical margins of pale rufous or buffy white, the outer secondaries rufous for nearly their whole extent, the under surface of the wing greyish, creamy white near the base, all the quills barred above and below with blackish brown; tail ashy grey, crossed by two very broad bars of black, tipped with creamy white, before which an indistinct subterminal line of ashy grey is visible, some of the outer upper tail-coverts and base of tail slightly mottled with whitish; under surface of body tawny rufous, crossed with broad bars of ochraceous buff, the under wing-coverts similarly marked, the lower ones ochraceous buff, with greyish black cross-bars.

"The next change seems to be in the undersurface, where the ochre-coloured become quite white, and whitish bars appear on the grey throat. From this stage (to judge by our specimens) it changes by a partial moult, and by a gradual change of feather at the same time; for the bars on the breast lose by degrees their rufous tint and become grey, while the back also becomes slaty grey instead of brown; the nuchal collar gradually disappears. This gradual development seems to be satisfactorily traced, with the exception of the tail, which, instead of agreeing with that of the rufous or "mature" stage, has four rather narrow black bars, like the young specimen first described. This can only be accounted for by the fact that Hawks have really no fixed laws of change in plumage, and that it is impossible for anyone to define exactly the regular sequence of the variations. No two birds are exactly alike; for one has the head more advanced, another the tail, vice versa. Thus the bird last noticed as donning his grey dress is very far advanced as regards his body-plumage, but has not moulted his tail, whereas those in the rufous dress are not so forward in their body-plumage, but have already the tail of the adult (one being in the act of moulting).

"*Adult female*:—Slaty blue above and below; no trace of a nuchal collar; under surface narrowly but irregularly barred with white,

the under tail-coverts clear buff; under wing-coverts grey, thickly barred with buffy white; quills blackish, shaded with slaty grey above, the secondaries entirely of this colour, the under surface greyish white, with black bars and tips, less conspicuous on the upper surface; tail alternately crossed with two bands of black above, with a broad intermediate band of ashy grey between, narrowly tipped with ashy grey, barred with ochraceous buff and black below, the bars very broad. Total length 17 inches, culmen 1·6, wing 11·7, tail 7·5, tarsus 1·4.

"*Adult Male*:—A little smaller than the female. Total length 16 inches, culmen 1·55, wing 11, tail 7·5, tarsus 1·4." (SHARPE, l. c.)

I have quoted Mr. Sharpe's admirable description of this species in full; as the series of specimens at my command is totally inadequate to enable me to properly describe the various stages of plumage.

The bird is recorded from Grenada, and is probably accidental in the Antilles.

GENUS *Polyborus* VIEILLI.

Polyborus VIEILLOT, Analyse, p. 22, 1816.

Polyborus cheriway (JACQ.).

Falco cheriway JACQ. Beitr. p. 17, tab. 4 (1784).

Polyborus vulgaris D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 9 (1840).

—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).

Polyborus tharay BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 306 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 221 (1865).

Polyborus cheriway BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 306 (1860) (Cuba).—GUNDL. J. f. O. 1871, p. 284 (Cuba).—CORY, List Bds. W. I. p. 23 (1885).

Polyborus brasiliensis BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 306 (1860) (Cuba).

Polyborus auduboni GUNDL. J. f. O. 1871, p. 357 (Cuba) (?).

Accidental in Cuba.

FAMILY CATHARTIDÆ.

GENUS *Cathartes* ILLIGER.

Cathartes ILLIGER, Prodri. p. 236, 1811.

Cathartes aura (LINN.).

Vultur aura LINN. Syst. Nat. I, p. 86 (1758).

Cathartes aura D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 4 (1840).—

GOSSE, Bds. Jam. p. 1 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 104 (1859) (Bahamas); *ib.* BREWER, p. 306 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 203 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 150 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 221 (1865); *ib.* J. f. O. 1871, p. 253 (Cuba).—CORY, Bds. Bahama I. p. 134 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, List Bds. W. I. p. 23 (1885).

Recorded from the Bahamas, Cuba, and Jamaica.

GENUS *Catharista* VIEILL.

Catharista VIEILLOT, Analyse, p. 21, 1816.

Catharista atrata (BARTR.).

Vultur atratus BARTR. Trav. Car. p. 285 (1792).

Cathartes atratus MARCH, Pr. Acad. Nat. Sci. Phila. 1863, p. 151 (Jamaica).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).

Catharista atrata CORY, List Bds. W. I. p. 23 (1885).

This species is claimed to have occurred in Jamaica. No other West Indian record.

THE SENSE OF SMELL IN CATHARTES AURA.

BY IRA SAYLES.

IN the 'Standard Natural History,' edited by John Sterling Kingsley, published by S. E. Cassin & Co., Boston, Vol. IV, p. 271, in an article written by Walter B. Barrows, I read as follows:

"The name condor, Humboldt says, is from a word in the language of the Incas, signifying to smell," and adds: "There is nothing more astonishing than the almost inconceivable sagacity with which the condor distinguishes the odor of flesh from an immense distance."

Mr. Barrows then adds: "This belief in the extraordinary power of smell possessed by carrion vultures is largely an inherited or traditional one, and was long ago shown to be without foundation. That they have some smell is well known, and Owen has even shown that in the turkey buzzard the olfactory nerves

are highly developed. Recognizing this fact in the anatomy of the bird, there is yet very little evidence that the power is ever used in the detection of food."

He proceeds by referring to experiments made by Audubon, Bachman, and Darwin.

Audubon's experiments :—"The perfectly dry, stuffed skin of a common deer, placed in the attitude of death, attracted a vulture [*Cathartes atratus*] within a few moments, though there was nothing eatable about it; after satisfying itself of which, by walking over it and tugging at it, the bird circled about over the field until it espied a small snake, not thicker than a man's finger, upon which it at once pounced. Moreover, a large and putrid carcass of a hog carefully covered by canes and brush so as to be invisible, remained undiscovered by the vultures in spite of the intolerable stench it sent out, though they frequently passed by accident quite near it, and the dogs at once discovered it. Yet a small, freshly-killed pig hidden near the same place was at once traced out by the vultures, by the blood which was allowed to run from it as it was carried to its hiding place."

"Bachman tried these tests, and added some new and perfectly convincing ones. The rough painting of a sheep, skinned and cut open, soon brought vultures to examine and tug at it, and though the experiment was repeated scores of times, it never failed, on each fresh exposure, to attract the hungry birds. A wheelbarrow-load of tempting carrion was next covered by a single sheet of thin canvas, above which bits of fresh meat were strewn. The fresh meat was soon eaten, but, though the vultures must have frequently had their bills within an eighth of an inch of the carrion beneath, they did not discover it.

"While at Valparaiso in 1834, Darwin experimented on twenty or thirty condors which were kept in a garden at that place. They were tied in a long row at the foot of the wall, each bird by a single rope, and Darwin walked backward and forward before them, at a distance of about ten feet, with a piece of fresh meat in his hand, wrapped securely in a piece of white paper. No notice whatever was taken of it by the birds. He then threw it on the ground within a yard of an old male condor, who looked at it carefully for a moment and paid no further attention. With a stick it was pushed closer and closer, until he touched it at last with his beak, when instantly the paper was torn off, while every bird in the long row began struggling and flapping its wings."

Criticisms.—I have made these quotations in full for the purpose of offering a few criticisms, and adding my own observations.

First point. Mr. Owen, as a comparative anatomist, declares that the olfactories are largely developed. Mr. Owen's testimony on this point I take as entirely satisfactory. Now I boldly challenge the world to produce an instance of a large, well-developed nerve of sense, in any species, which was not so developed by use, and which is not used. This, I think, is pretty good Darwinism.

For what, however, does the Turkey Buzzard need a large and well-developed organ of smell? Animals with any large sense-organ need that organ for one of two purposes—*either to guard against danger, or to aid in finding food.* Hunters, in their search for deer, know well that they must calculate on keeping their quarry at the windward. The deer's sense of smell is keen, and he flies from the tainted breeze at his highest speed.

The Buzzard does not need the sense of smell for protection against danger. *To aid in its search for food is, therefore, its only use in this bird.* I might rest my argument right here, and leave it for others to overthrow my position.

I premise here that I do not call in question the Buzzard's keenness of vision. That is granted; but any experiment that goes only to prove the Buzzard's keenness of vision, by no means proves its sense of smell dull.

Now, what are the conditions on which the sense of smell is available? First, there must be something to taint the medium, whether water or air. Anglers sometimes put some strong odor on their bait. The water dissolves this, and the fish, under certain conditions, smell it, and rush for it. Something which the air can dissolve is exposed in the air, which the air takes up and diffuses, and animals with a keen sense of smell for this thing speedily find their way to it. Kill any animal by bleeding, during the warm weather, and that animal will scarcely breathe its last before swarms of the green meat-fly will be humming around it.

But this is not all. The fish can never smell the tainted water up stream. It must be in the water below the tainted bait. Moreover, the tainted current takes a peculiar form, gradually spreading laterally and up and down, giving to the tainted tract approximately the shape of a cone.

In precisely the same manner, any odor spreads through the air. If the air is very calm, the odor rises in the shape of an inverted cone. If now a bird passes above it, and the odor is one springing from the customary food of such birds, it will descend in search of its scented food. If the wind has a gentle movement, the odor rises obliquely; and the bird, in hunting its food, will descend obliquely along the scented tract.

If the wind is high, the odor is born off horizontally; and the bird, when it crosses the tract of scented air, will follow it horizontally.

One word further. The Buzzard is not formed for digging the earth, or for tearing away any obstacles, in order to reach a tainted carcass.

Now, let us proceed with the experiments tried, and relied on as proofs that Buzzards do not use their sense of smell in search of food. First, Mr. Audubon's perfectly dry, stuffed deer skin. Admit that the Buzzards came, because they saw what appeared to be a deer. Does that prove that the Buzzard does not search by smell? It is a mere negative, utterly devoid of the slightest relevancy in the argument.

Second, the Buzzard caught a little snake. That only shows that the Buzzard can see.

Third, the big dead hog *thoroughly concealed*. The author says the Buzzards passed near it *by accident*. Is he sure that they flew near it by accident? I affirm that they passed near it in search of it, but it being thoroughly concealed they failed to find it; and had they thought it in the brush-heap they could not have reached it. Dogs found it, of course, and removed the brush.

Fourth, they did find a pig—a *little* pig—by tracking its blood.

Now these experiments determine nothing whatever concerning the sense of smell—the object of the experiments.

Bachman's painted sheep simply and only shows that the Buzzards can see, and can be imposed on. I remember that a certain ancient Greek painter so cunningly imitated grapes, that the poor little birds came and pecked at his pictures. Poor things, they were deceived; so were Bachman's Buzzards. But, really, does this prove anything concerning the sense of smell? Not in the least.

Secondly, he takes "a wheelbarrow-load of *tempting* carrion," completely covers it from view with canvas and scatters fresh meat above the canvas. The Buzzards come and eat the fresh meat, picking it piece by piece from the canvas covering; but did not tear off the covering and get at the carrion. Very well. Now he leaves us with the impression that he concludes that the Buzzards did not smell that carrion at all. Undoubtedly, however, the Buzzards thought themselves eating the very carrion itself; and, when they had eaten all they saw, they supposed that no more remained. This was only their usual experience. When they eat carrion from the ground, there always remains a great deal of stench in the ground, but they have no appetite for fetid ground, so they do not tear it up and fill their caws with it; no more did their stomachs have a craving for stinking canvas.

Mr. Darwin walked before the Condors with fresh meat securely wrapped in white paper, and the Condors took not the least notice of it; but so soon as the old male Condor got his nose down so he could take the air, he seized it, and tore off the paper in an instant. Now, Mr. Darwin forgot to tell us which way the wind blew, or whether or not there was any wind at all. His experiment proves absolutely nothing.

I have now some observations that are *positive*, relative to the keenness of the smelling power of the Turkey Buzzard.

In Christmas week, 1874, my folks in Virginia killed their hogs. As country women usually do, they saved the coarsest offal, put it in a pot, and set it away in the corner of the meat-house, intending to add the ley of wood-ashes, cut the grease, and make soap of it. The pot was forgotten. I was at the North at that time, and returned in February, knowing nothing of the pot.

In April, that pot revealed itself by serving a writ of ejectment on any one that ventured into the meat-house. It was discovered, and itself was ejected from the meat-house to the woodshed one evening, of which proceedings I knew nothing.

I am an early riser. Next morning, as soon as light, I was up and about the chores of the plantation. I had occasion to pass through the wood-house; and I went out faster than I went in. The dogs had found that pot full of stench and had eaten all their stomachs could endure.

The wind was blowing a furious gale from the east. It was all a man could do to keep his feet. About sunrise I chanced

to look to the west, and saw a large number of Buzzards, more than two miles away, crossing a line back and forth, from north to south; and I soon discovered that they were coming eastward. It did not occur to me that they were tracing the tract of tainted air from that pot full of putrescence. I kept quietly about my business and the Buzzards kept about theirs; and in less than twenty minutes from the time I first discovered them, they were on hand, wheeling about that woodshed. They were fifty or sixty strong. They staid around during an hour or two, when they gave up the search and left for other parts. Here was, therefore, a cone of tainted air, with its apex in that pot. It was drifted rapidly to the west, rising at an exceedingly low angle. The Buzzards crossed that cone back and forth so accurately that I could mark its limits almost exactly. Now there is no possible hypothesis applicable to the solution of these Buzzards' actions, but that they smelt that stench more than two miles. I might give many other notes on this matter, but I deem this perfectly apropos and convincing.

I have great regard for Mr. Audubon, Mr. Bachman, and Mr. Darwin, for what they have well done; but, in a series of experiments for ascertaining a great scientific fact, that these men should so blunder, and so falsely reason, is to me certainly astonishing. In attacking their conclusion, in this case, I feel that they are merely human.

FOURTH MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE fourth meeting of the American Ornithologists' Union was held at the National Museum in Washington, November 16, 17, and 18, 1886. The number of members in attendance was about the same as at previous meetings, namely, about twenty Active Members and thirteen Associates. The official report of the Secretary stated that but a single death had occurred among the members during the past year,—that of Mr. Snowdon Howland, of Newport, R. I., an Associate Member, well known as an

öologist of note.* There is at present no vacancy in the class of Foreign Members (limited to 25), and there are only four vacancies in the class of Active Members (limited to 50). The Corresponding Members (limited to 100) number 69, and the Associate Members (unlimited as to number), 112.

The Treasurer's report made known the fact of a considerable deficit, partly on account of 'The Auk,' and partly on account of the publication of the 'Code and Check-List.' While the assets of the Union, consisting of its unsold publications, much more than offset this deficiency, it was deemed desirable to take measures to at once relieve the treasury of debt. It was therefore voted to open a paper for voluntary subscriptions to meet the present indebtedness, the subscribers being allowed to receive, at their option, back volumes of 'The Auk,' or copies of the 'Code and Check-List,' to the amount of their subscriptions.† In reference to the future, it was stated that there seemed to be little danger of any deficit on account of 'The Auk,' or from any other source, and that the financial prospects of the Union gave no cause for uneasiness.

The report from the Council included the following nominations for membership, namely, to the class of Active Members, Messrs. William Dutcher and Jonathan Dwight, Jr., of New York City, and W. E. D. Scott, of Tarpon Springs, Florida (formerly of Arizona); to the class of Corresponding Members, Messrs. T. Büttikofer, Leyden, Holland; M. Mamèye, Tokio, Japan; Robert MacFarlane, Winnipeg, Manitoba; W. E. Brooks, Milton, Ontario. To the class of Associate Members there were 44 nominations. All the nominees were later duly elected.

The Council also recommended that the Union take measures to become an incorporated society, and that a committee be appointed to draw up a new Constitution, accompanied by appropriate By-Laws, for adoption under the Act of Incorporation. Later in the session the Union voted to become incorporated, and instructed the Council to take the necessary steps to secure its incorporation, and also to draft a new Constitution and By-Laws, for adoption at the next annual meeting.‡

* See Auk, III, p. 144.

† The prompt responses to this appeal, it may be stated, have satisfactorily met the emergency.

‡ The Council appointed as a committee on incorporation the President and Professor Baird, and as a committee to draft the new Constitution and By-Laws the President, Professor Baird, Dr. Coues, Mr. Henshaw, and Dr. Stejneger.

The reports of Committees proved of special interest, and showed commendable activity on the part of their members. The chairman of the Committee on the Protection of North American Birds, Mr. George B. Sennett, gave a detailed and carefully prepared report on the work of this committee, which has held, during the year, twenty meetings at which a quorum was present for the transaction of business, besides several informal sessions. The committee had endeavored to awaken public interest in behalf of the birds, by giving information as to the extent of their destruction for millinery and other needless purposes; believing that a proper public presentation of these facts would go far toward checking this great evil. It has also drafted what it deems a suitable law for the protection of song and non-game birds, the enactment of which in the various States it not only recommends, but which it is taking measures to secure. The proposed law has been practically adopted by the State of New York, and seems likely to meet with favor among legislators in other States. They have published two 'Bulletins,' one of sixteen quarto pages, the other of eight, large editions of which have been gratuitously circulated, and of which copies may be obtained on application to members of the committee. Notwithstanding the considerable outlay of money involved, the committee, by the aid of a few outside contributions, had met all the expenses incurred, and had no indebtedness to report to the Union. It has been greatly aided in its work by the 'Science' and 'Forest and Stream' Publishing Companies, these journals having been, respectively, the mediums of the original publication of the 'Bulletins,' which were later issued in pamphlet form in large editions.

The Audubon Society, an outgrowth of the Committee's work, proves a most efficient co-worker. Under the fostering care of the 'Forest and Stream,' this society already numbers some 16,000 members, with over 300 local secretaries, scattered throughout the United States and in various foreign countries. A special report of the work of the Audubon Society, from Dr. George B. Grinnell, to whose efforts the Society owes its existence and success, was included in the report of the committee. The committee also acknowledged the important aid it had received from the American Humane Association which, through its President, the Rev. G. E. Gordon, had given it very valuable

assistance. The public press had also warmly seconded its efforts, and it felt justified in claiming that its labors had yielded most encouraging results, and that the future was full of promise of further successes. The public was thoroughly aroused to the importance of enforcing strenuous measures for the better protection of our birds, and the sympathy and assistance received by the committee in its work was full of encouragement to further effort.*

The report of the committee was accepted as a report of progress, and the committee continued.

The chairman of the Committee on the Geographical Distribution and Migration of North American Birds, Dr. C. Hart Merriam, gave a very satisfactory account of the work of his committee, dealing particularly with the economical aspects of its work. As already stated in the pages of '*The Auk*',† the work undertaken by this committee has practically been assumed by the U. S. Department of Agriculture, and has now reached the status of a distinct Division of this Bureau of the Government, under the title 'Division of Economic Ornithology and Mammalogy,' the scope of the work under Government auspices having been broadened to include the economic relations of mammals to agriculture as well as those of birds. Last June, through the influence of Senator Warner Miller, of New York, not only was this important change secured, but also an appropriation of \$10,000 for carrying on the work for the present year. This appropriation was for the "promotion of Economic Ornithology and Mammalogy; an investigation of the food-habits, distribution, and migration of birds and mammals in relation to agriculture, horticulture, and forestry; for publishing reports thereon; and for drawings, and travelling and other expenses in the practical work of the division." Dr. Merriam has associated with him as scientific assistants Dr. A. K. Fisher and Prof. W. B. Barrows.

Dr. Merriam, in his report, referred especially to his investigations in relation to the Bobolink—the 'Rice Bird' of the South—

* For notices of the work of this committee, its organization and membership, see *Auk* III, pp. 143 and 287, and its 'Bulletins,' entitled as follows: American Ornithologists' Union. Bulletin No. I. of the Committee on Protection of Birds. *Destruction of our Native Birds*, pp. 1-16. Published originally in '*Science*,' No. 160, Feb. 26, 1886.

Bulletin No. 2. *Protection of Birds by Legislation*, pp. 1-8. Published originally in '*Forest and Stream*,' Nov. 11, 1886.

† See *Auk*, III, pp. 117, 416.

and the English Sparrow, and in less detail to the investigations of the food habits of our birds in general. He gave a very interesting and detailed account of his observations in the rice fields of South Carolina and Georgia, and Dr. Fisher related his observations in the rice fields of Louisiana.

The work of collecting data respecting bird migration is still continued, the number of observers to whom schedules have been sent during the last year being fully up to the average of past years.

As yet none of the reports prepared by the division superintendents have been published but several are nearly ready for the press, as is also a special report on the English Sparrow; the publication of some these reports has been unexpectedly and unavoidably delayed, but their early appearance may now be anticipated.

The reports of the two committees elicited interesting remarks bearing mainly on the subject of the economic relations of birds to man, and on their protection, the work of the two committees being more or less inter-related at many points.

The reading of scientific papers occupied the third day's session. Col. N. S. Goss, of Kansas, presented a paper entitled 'Additions to the Catalogue of the Birds of Kansas' (published in this number of 'The Auk,' pp. 7-11), and another on 'The Number of Eggs constituting a Normal Set.'

Mr. George B. Sennett gave a paper on 'The Snowy Plover of Texas,' with an exhibition of specimens.

A paper from Dr. Ira Sayles was read on the 'Sense of Smell in the Turkey Buzzard' (see this number of 'The Auk,' p. 5).

Mr. Frederick A. Lucas presented interesting notes of his experience in capturing sea birds (Procellariidae) (see *antèa*, pp. 1-7).

Dr. L. Stejneger gave a short résumé of the methods of the celebrated German ornithologist, Chr. L. Brehm, illustrated by a good series of a South European Ring Thrush (*Turdus alpistris* Brehm), which prejudice and want of material have prevented the European ornithologists from recognizing as distinct from the northern typical *Turdus torquatus*. Dr. Stejneger in rediscovering this interesting and strongly marked species was able to substantiate the observations made by Brehm, and he predicted that if European ornithology be studied on a plan similar, and with similar means, to that applied here in America, still

more important disclosures would result. For such a study the Brehm collection, which since his death has been inaccessible, would be indispensable.

Other papers presented by title were 'The Summer Birds of the Bras d'Or Region of Cape Breton Island,' by Jonathan Dwight, Jr. (see *antea*, pp. 13-16); 'The Summer Birds of the Presidential Range of the White Mountains, N. H.,' by Mr. Arthur P. Chadbourne; and 'Notes on the Night Migration of Birds at Cleveland, Ohio,' by Mr. Wm. F. Dærtenbach.

A committee on Avian Anatomy was appointed, consisting of Drs. Coues and Shufeldt.

Resolutions of thanks were tendered Professor Baird for his kindness in securing the lecture room of the U. S. National Museum as a place of meeting for the Fourth Congress of the Union; to Mr. George T. Angell, President of the Massachusetts Society for the Prevention of Cruelty to Animals, for securing protection during the past year to the Gulls and Terns breeding on Muskeget Island, Mass., by placing an agent there, deputized as a game constable, to prevent the destruction of these birds; to the Rev. G. E. Gordon, President of the American Humane Association, for assistance and co-operation rendered the Committee on Protection of North American Birds; also to the 'Science' Publishing Company, and to the 'Forest and Stream' Publishing Company, for valuable assistance rendered the same committee, and especially to the latter Company for its invaluable services in behalf of the Audubon Society.

The election of officers resulted in the re-election of the officers of 1886. At the close of a highly satisfactory three days' session the Union adjourned to meet in Boston, October 10, 1887.

RECENT LITERATURE.

Pleske on the Birds of the Kola Peninsula.—The second part of Mr. Theodor Pleske's valuable work* has just come to hand, and treats of

* Uebersicht | der | Säugetiere und Vögel | der | Kola-Halbinsel. | Von Theodor Pleske, | Cand. d. Naturwissenschaften. | —Theil II. Vögel und Nachträge. | —(Der Akademie vorgelegt am 5. März 1885.) | —Aus den "Beiträgen zur Kenntniss des Russischen Reiches und der angrenzenden Länder Asiens, zweite Folge," besonders abgedruckt. | —St. Petersburg, 1886. | Buchdruckerei der Kaiserlichen Akademie der Wissenschaften. | Wass. Ostr., 9 Lin., No. 12.—8 vo. pp. iv + 515.

the birds of that very interesting region, which embraces the so-called 'Russian Lapland.' Very properly, however, the author has ignored the political borders and includes part of Norwegian East-Finmark west to the Tana-fjord and Tana-elv. Towards the north and east the region is bordered by the Arctic Ocean and the White Sea.

The work, in the first place, is intended to be a report on the author's own explorations in that region during the summer of 1880, but ornithologists will be thankful that he intended it to include the observations of his many predecessors, for he has succeeded in producing a very valuable faunistic monograph of one of the most interesting parts of the Palæarctic Region. It will be seen, from the map, that the province in question connects the Scandinavian Peninsula with the Eurasian Continent. Scandinavia during the Glacial Period was probably uninhabited by any birds except, perhaps, the most Arctic species, covered, as it was, with enormous glaciers, and separated from the rest of the Western Palæarctic Region by a wide sea covering the German and Russian lowlands and uniting the Arctic and the Atlantic Oceans to the east of the peninsula. When the ice receded and the land rose, an immigration of animal life commenced from two different directions—from the south over the Danish Islands, and from the east over Finland, the broad neck of land which now separates the Baltic and the White Sea. This is not only a hypothesis invented to explain the constitution of the present fauna, but it is an observed fact, for the immigration both ways continues to-day, and the regular additions to the Scandinavian fauna during this century can be distinctly and positively traced. Thus it happens that a Central European, a Siberian, and a truly Arctic avifauna meet just in the region which Mr. Pleske has chosen for his monograph. The complexity of the migrating routes which pass along or cross this same section is well shown on the map accompanying Palmén's 'Zugstrassen der Vögel,' giving additional interest to the region, and explaining the fact that the author treats of over 200 species of birds, notwithstanding that the chief part of the country included is situated to the north of the Arctic Circle.

Mr. Pleske has had one great disadvantage: he has not had the opportunity of verifying his predecessors' statements and identifications by examining their specimens. In fact, most of the older records and many of the recent ones are not at all based on specimens, and those which have been collected are scattered all over the world. In many cases, therefore, there is a lack of *absolute* identification, which is felt more especially in the case of species, the subspecies or nearest allies of which, are very difficult to discriminate. Thus we are ignorant of the true status of '*Picus minor*' and of '*Pica rustica*' from that region, whether they are the Central European forms, or the Siberian subspecies, or both, or intermediate ones between the two. On the other hand, it is evident that the author, when having access to specimens, knows how to discriminate. Thus we note with satisfaction that for the first time in a work of that scope the Redpolls (*Acanthis*) are correctly understood, for Mr. Pleske clearly distinguishes, discusses, and describes three forms as occurring in the region, viz.: *A. linaria*, *A. holbælli*, and *A. exilipes*.

The faunal synopsis is preceded by an introduction which treats of the distribution of the species in the region in general, and in the different botanical zones of the country. Then follows a bibliography of the ornithological literature relating to Lapland, apparently very full, sufficiently detailed, and embracing 113 separate titles. This large material is admirably handled when treating each individual species, which is preceded by a complete synonymy of all the published records of its occurrence within the region. It is only to be regretted that he should have paid any attention at all (cf. p. 210 in regard to *Falco candicans*) to Rev. Bowden's miserable 'The Naturalist in Norway,' for a worse fraud and humbug, as far as the ornithology at least is concerned, has never been published.

In the synopsis the author follows Dresser's arrangement and nomenclature; a course to be specially commended.

Altogether Mr. Pleske's book makes a most welcome addition to ornithological literature, and we most heartily congratulate him upon its completion.—L. S.

W. E. Brooks on the Genus Acanthis.—Mr. Brooks, the well-known Indian Ornithologist, now living in Milton, Ontario, has recently contributed to 'The Ibis' two papers* on the Redpolls, especially the American species. The final result to which Mr. Brooks has arrived, he gives as follows: "We have, then, five very well-marked species of *Acanthis*, viz. *A. hornemannii*, *A. exilipes*, *A. rostrata*, *A. linaria*, and *A. rufescens*; also one doubtful bird, *A. linaria holbælli*." Of this latter he says: "To me it is not a thoroughly satisfactory species, like the others, but at present its long bill is not easily accounted for. I am not partial to the trinomial system, but for convenience' sake this bird might stand as *Acanthis linaria holbælli*. It is a variation not yet thoroughly worked out." The present reviewer, who, on an earlier page of this number of 'The Auk,' has attempted to put this form on a satisfactory footing, feels quite satisfied with this admission of Mr. Brooks, who, it must be remembered, is an opponent of the theory of evolution, and to whom a form must be a 'full' species or nothing. On the other hand it is very gratifying to find one's views in regard to so difficult a group as the Redpolls shared and sustained by an ornithologist of so great power of discrimination as Mr. Brooks, whose statements the present writer is glad to indorse in most cases. The differences of opinion between Mr. Brooks and myself relate directly to the question of 'species or subspecies,' or perhaps 'binomials or trinomials,' differences which, in fact, are quite unessential.—L. S.

Stejneger on Japanese Woodpeckers.—The first of a series of papers on Japanese birds, published in the 'Proceedings' of the United States

* Stray Ornithological Notes. *Ibis*, 1885, pp. 380-389; the portion relating to *Acanthis* on pp. 381-385. Additional Notes on the Genus *Acanthis*. *Ibis*, 1886, pp. 359-364.

National Museum, treats of the Woodpeckers,* of which ten species are recognized, and also one subspecies, the latter and two of the species being described as new. Questions of synonymy are treated in detail, and the references to previous writers on the species appear to be given with fulness. The paper is accompanied by a colored plate.

As Dr. Stejneger points out in his introductory remarks, the ornithology of Japan offers an inviting field, in which very little discriminating work has yet been done. "Formerly," says Dr. Stejneger, "it was sufficient to know that a bird was from 'Japan.' If the description of a Japanese species was found to fit a Japanese specimen approximately, the latter was identified as that species without further comparison. If the original specimen was described from Nagasaki, and the second one, believed to be the same, came from North Yesso, the habitat of the species was given as embracing the whole of Japan." Our knowledge of Japanese ornithology is at present only fragmentary, large portions of this great country being as yet almost unexplored, while some of it "is a complete *terra incognita*, ornithologically speaking." "American ornithologists," Dr. Stejneger well observes, "will not wonder at hearing that species apt to break up into local forms have done so in a group of islands which in extent corresponds to the coast from the Gulf of California to Vancouver Island, or from the southern extremity of Florida to Nova Scotia, with a variation of climate fully as great as that of the two last mentioned localities: with high mountain ranges, and studded with volcanoes eight thousand to twelve thousand feet high; with a vegetation . . . characterized in the south by the bamboo, the rice, the mulberry tree, and the tea-plant, while in the north the firs form extensive forests, and with a temperature ranging from the almost Siberian winters of Yesso, to the tropical heats of Kiu-Shin," it would indeed be an extraordinary phenomenon, and quite reverse to what takes place in other countries of similarly varying conditions, were the birds of Japan uniform all through that empire."

The present paper is announced as the first of a series of "preliminary reviews of some of the most perplexing groups in order to solicit specimens and advice from fellow ornithologists, and to induce those who have the opportunity to attempt the solution of some of the questions, if possible, in the field." As already stated (Auk, III, p. 495), the author has the "intention to write a comprehensive and reliable guide to Japanese ornithology, with ample descriptions of all the known forms, from original Japanese specimens," and he appeals for aid in the way of material for carrying out his purpose.—J. A. A.

Stejneger on the British Marsh-Tit.—Dr. Stejneger has separated† the British Marsh-Tit, under the name *Parus palustris dresseri*, from the European form, from which it differs in being darker in color, with a shorter

* Review of Japanese Birds. By Leonhard Stejneger. I. The Woodpeckers. Proc. U. S. Nat. Mus., Vol. VIII, pp. 99-124, pl. ii. Published Sept., 1886.

† The British Marsh-Tit. By Leonhard Stejneger. Proc. U. S. Nat. Mus., 1866, pp. 200, 201.

tail, etc. Although British ornithologists have long been aware of these differences, Dr. Stejneger thinks it curious that they have not had "the courage to describe this [British] bird under a distinctive name, not even those who recognize *Parus britannicus* as a distinct species."—J. A. A.

Stejneger on a 'Lost Species' of Murrelet.—According to Dr. Stejneger,* Pallas's *Cephus perdix* must be removed from the list of synonyms and rank as a good species, which "takes the place of *B. marmoratus* in Asiatic waters," the latter being apparently confined to the American side. A Kamtschatkan specimen (δ ad., Aug. 27, 1884) of *B. perdix* is described in detail and figured, and the synonymy and distinguishing characters of this species, *B. brevirostris*, and *B. marmoratus* are presented at length.—J. A. A.

Ferrari-Perez on the Birds of Mexico.—In 1877 the Geographical and Exploring Commission of the Republic of Mexico was established by an act of Congress, and became finally organized in 1878. In 1879 Mr. Fernando Ferrari-Perez was appointed to the scientific corps of the general staff as Naturalist of the Commission. During the years that have since elapsed considerable collections have been brought together in different departments of natural history, 'Catalogues' of which are to appear in the 'Proceedings' of the U. S. National Museum. The first instalment of these has now appeared†; it includes Mammals, Birds, Reptiles, and Batrachians, the report on the birds occupying 52 pages, and embracing 265 species. The annotations generally include merely citations of the works where the species were first described, or in which the nomenclature adopted was established, the vernacular names, and list of the specimens, with date and locality of capture. The specimens have been determined by aid of the collections at the U. S. National Museum, and assistance by Mr. Ridgway and Dr. Stejneger in their identification is also acknowledged. Besides this, there are remarks by Mr. Ridgway on many of the more interesting species, duly bracketed and signed "R. R." these annotations, of course, adding greatly to the value of the 'Catalogue.' The new species, which were briefly diagnosed by Mr. Ridgway in a recent number of the 'Auk' (III, p. 331), are here described at length.

The paper forms not only an important contribution to our knowledge of Mexican ornithology, but also throws much light upon the southward range of many North American species. Sprague's Lark (*Anthus spraguei*) is reported from Puebla, a point 1000 miles further south than any previous record.—J. A. A.

* On *Brachyramphus perdix* (Pall.) and its nearest Allies. By Leonhard Stejneger. *Zeitschr. f. ges. Orn.*, 1886, pp. 210-219, pl. vii.

† Catalogue of Animals collected by the Geographical and Exploring Commission of the Republic of Mexico. By Fernando Ferrari-Perez, Chief of the Natural History Section. *Proc. U. S. Nat. Mus.*, 1886, pp. 125-199. Published Sept. 1886. (Birds, pp. 130-182.)

Ridgway on a Melanistic Phase of the Broad-winged Hawk.—Mr. Ridgway has recently described* “the melanistic plumage of *Buteo latissimus*,” as exhibited in a specimen taken at Baxter, Iowa, by Mr. J. W. Preston. This is the only specimen thus far seen by Mr. Ridgway, but Mr. Preston reports having seen two others, one of which was nearly secured.—J. A. A.

Ridgway on the Species of the Genus Empidonax.—In the last number of ‘The Ibis’ (Oct., 1886), Mr. Ridgway has three papers on the *Empidonaces*. The first† describes a new species (*Empidonax salvini*) from Guatemala; the second‡ treats of the distinctness of *E. brunneus* Ridgw. from *Empidochanes furcatus* (Max.), the two species being found to be not only specifically but generically different, although some authorities have considered them identical. The third§ gives an elaborate synopsis of the species of the genus *Empidonax*, of which 15 species and 3 subspecies are recognized; and also diagnoses of the genera *Mitrephanes* and *Empidochanes*.—J. A. A.

Cory on Birds from several little-known Islands of the West Indies.—Mr. Cory having recently received collections of birds from several of the lesser known West Indian islands has given,|| in the last number of ‘The Ibis,’ nominal lists of the material obtained, as follows: Barbadoes, 12 species; St. Vincent, 23 species; Marie Galante, 13 species; La Desirade, 11 species; Grand Terre, 15 species; also 10 species from Santa Lucia.—J. A. A.

Minor Ornithological Publications.—The ‘Forest and Stream,’ Vols. XXIV and XXV, 1885, contains the following notes and papers (Nos. 1069-1126):—

1069. *The Birds of Michigan.* By Dr. Morris Gibbs. *Forest and Stream*, Vol. XXIV, Jan. 29, 1885, pp. 5, 6; Feb. 5, pp. 26, 27; Feb. 12, pp. 44, 45; Feb. 19, p. 65; Feb. 26, p. 84; Mch. 5, p. 104; Mch. 12, pp. 124, 125; Mch. 19, p. 144; Apr. 2, p. 184; Apr. 16, p. 224; Apr. 30, pp. 267, 268; May 7, pp. 288, 289; May 14, p. 307; May 28, p. 347; June 11, p. 387; June 25, p. 427; Vol. XV, July 30, pp. 4, 5; Nov. 12, p. 304; Dec. 3, p. 365.—An elaborately annotated list, containing copious notes on the habits of many of the species mentioned.

1070. *Golden-winged Woodpecker Wintering in Maine.* By Everett Smith. *Ibid.*, Feb. 5, p. 27.

* Description of a Melanistic Specimen of *Buteo latissimus* (Wils.). By Robert Ridgway. *Proc. U. S. Nat. Mus.*, 1886, pp. 248, 249. Published Oct. 1886.

† Description of a new Species of the Genus *Empidonax* from Guatemala. *Ibis*, 1886, pp. 459, 460.

‡ On *Empidochanes furcatus* (Max.) and *Empidonax brunneus* Ridgw. *Ibid.*, pp. 360, 461.

§ On the Species of the Genus *Empidonax*. *Ibid.*, pp. 461-468.

|| On a Collection of Birds from several little-known Islands of the West Indies. By Charles B. Cory. *Ibid.*, 1886, pp. 471-475.

1071. "The Birds of Long Island." By J. B. B. *Ibid.*, Feb. 12, p. 46.—Notice of J. P. Giraud's well-known work, with extracts from it.
1072. *How to Identify Birds.* By Everett Smith. *Ibid.*, Feb. 12, p. 44.—The writer repeats his offer to identify specimens, and gives directions how to send them in the flesh.
1073. *The Song of the White-throated Sparrow.* By Dr. M. L. Leach. *Ibid.*, Feb. 19, p. 65.
1074. *Virginia Rail Wintering on Long Island.* By Paul Geipel, Jr. *Ibid.*, Mch. 5, p. 105.
1075. *Winter Range of the Robin.* By W. W. Cooke. *Ibid.*, Mch. 11, p. 125.
1076. *Southern New York Winter Birds.* By W. T. E. *Ibid.*, Mch. 12, pp. 125, 126.—Notes on 23 species.
1077. *Snow Buntings [at Perth Amboy, N. J.].* By J. L. K. *Ibid.*, Mch. 12, p. 126.—The first seen in several years.
1078. *Acadian Owl.* By O. W. R. *Ibid.*, Mch. 19, p. 145.
1079. *A Screech Owl Attacks a Plymouth Rock Rooster.* By S. L. Davison. *Ibid.*, Mch. 19, p. 145.
1080. *Migratory Quail.* By W. Hapgood. *Ibid.*, Mch. 26, p. 166.—The recent attempt to stock the country with these birds declared to be a failure.
1081. *White Egrets in Orleans County, N. Y.* By S. L. Davison. *Ibid.*, April 9, p. 204.—Three killed in Carlton, "on Thanksgiving Day, 1883."
1082. *Where Did It Come From?* By Robert Ridgway. *Ibid.*, Apr. 9, p. 204.—Records the killing of a Prairie Chicken (*Cupidonia cupido*) on the Virginia side of the Potomac near Washington, March 17, 1885. (See below, No. 1086.)
1083. *Misplaced Confidence.* By F. Park, Jr. *Ibid.*, Apr. 16, p. 225.—A Great Horned Owl eats a Screech Owl confined with it in the same cage.
1084. *The Winter and Spring Birds at St. Louis, Mo.* By W. W. Cooke, based on notes by Otto Widmann. *Ibid.*, Apr. 23, p. 248.
1085. *Maine Birds.* By Everett Smith. *Ibid.*, p. 248.—Note on *Turdus mustelinus*.
1086. *The Washington Prairie Chicken.* By Homo. *Ibid.*, Apr. 23, p. 248.—May have been the descendant of birds liberated at Snow Hill, Md., some years before. (See above, No. 1082.)
1087. *The Woodcock's Song.* By J. H. D. *Ibid.*, Apr. 30, p. 268.
1088. *Birds in Queer Places.* By X. Y. Z. *Ibid.*, May 7, p. 288.—Relates mainly to various species of Gralla and Rails.
1089. *Fox Sparrows in Spring Migration.* By J. L. Davison. *Ibid.*, May 7, p. 289.
1090. *White Pelican on Long Island.* Editorial. *Ibid.*, May 21, p. 328.—One killed at Roslyn, L. I., May 11, 1885.
1091. *The Lesson of a Market.* By Geo. B. Sennett. *Ibid.*, June 4, pp. 366, 367.—On the small birds, killed as game, in the market of Norfolk, Va.

1092. *Arizona Bird Notes*. By Herbert Brown. *Ibid.*, June 4, p. 367.—Notes on the nesting of Palmer's and Bendire's Thrashers, and several species of Owls.
1093. *The Ivory-billed Woodpecker in Florida*. By S. C. Clarke. *Ibid.*, June 4, p. 367.
1094. *The Big [Ivory-billed] Woodpeckers*. By Geo. A. Boardman and J. M. H. *Ibid.*, June 11, p. 388.
1095. *The Big [Ivory-billed] Woodpecker [in Arkansas]*. By Yell. *Ibid.*, June 18, p. 407.
1096. *The Great [Ivory-billed] Woodpeckers [in Florida]*. By W. A. D. *Ibid.*, June 25, p. 427.
1097. *A "Brood" of [Golden-winged] Woodpeckers*. Editorial. *Ibid.*, June 25, p. 427.—“Nineteen young ones, alive and in good condition,” in one nest.
1098. *The Nest and Eggs of Swainson's Warbler. (Helinaia swainsoni.)* By William Brewster. *Ibid.*, July 9, p. 468.—Detailed account of the breeding of this rare species, with descriptions of nests and eggs, based on notes and specimens received from Mr. Arthur T. Wayne.
1099. *Rare Florida Birds*. By Red-Wing. *Ibid.*, July 16, p. 487.—Relates to Ivory-billed Woodpeckers and Parakeets.
1100. *Night Hawks Nesting [on Roofs of Buildings]*. By Dr. E. Sterling. *Ibid.*, Vol. XXV, July 30, 1882, p. 4.
1101. *The English Sparrow. Verdict of the American Ornithologist's Union*. *Ibid.*, July 6, pp. 24, 25.—Report of the Committee on the English Sparrow.
1102. *Quail in Confinement*. By W. and Jno. H. Osborne. *Ibid.*, Aug. 6, p. 25.
1103. *Water Birds of Nova Scotia*. By J. Matthew Jones. *Ibid.*, Aug. 13, pp. 43, 44; Aug. 27, p. 83; Sept. 10, p. 123.—An annotated list of 105 species. Includes several obvious malidentifications. The account given of “Wilson's Petrel” doubtless relates to Leach's Petrel, to which latter there is no reference. The list includes the “Crested Grebe (*P. cristatus*)”!
1104. *The Pileated Woodpecker*. By Dr. E. Sterling. *Ibid.*, Aug. 13, p. 44.
1105. *Ornithological Inquiries*. By Dr. C. Hart Merriam. *Ibid.*, Aug. 20, p. 63.—Circular issued by the Department of Economic Ornithology, Dr. Merriam, Ornithological Agent.
1106. *Weapons in Game*. By Dr. E. Sterling. *Ibid.*, Aug. 29, p. 84.—A Wild Swan, with an Eskimo arrow through the right wing, killed near Cleveland, O., on its northward migration. Figure of the bird, and of the wing-bones and the arrow. (See further note on the same, in issue of Dec. 10, p. 384.) Under this title are also two notes on encysted bullets found in Ducks and Geese, respectively by D. H. MacGowan and C. T. Richardson.
1107. *Foreign Game Birds in America*. By X. *Ibid.*, Sept. 3, pp. 103, 104.—An important historical paper on the subject.

1108. *The Colored Patch in the Crown of the Kingbird.* By C. Hart Merriam, M. D. *Ibid.*, Sept 14, p. 144.
1109. *How Many Nests?* By A. H. G. (of Scarborough, N. Y.). *Ibid.*, Sept. 24, pp. 163, 164.—On the number of broods per year, etc., of some of our common birds. (See also below, No. 1112.)
1110. *The Colored Patch in the Crown of the Kingbird.* By J. L. Davison. *Ibid.*, Sept. 24, p. 164.
1111. *Wild Fowl in Domestication.* By Junius P. Leach. *Ibid.*, Oct. 1, pp. 183, 184.
1112. *How Many Nests?* By A. H. G. *Ibid.*, Oct. 1, p. 184.
1113. *The Colored Crown of the Kingbird.* By J. G. R[ich]. *Ibid.*, Oct. 1, p. 184.
1114. *The Crown of the Kingbird.* By C. W. Beckham. *Ibid.*, Oct. 8, p. 204.
1115. *Kingbirds and Bees.* By G. L. Barnes. *Ibid.*, Oct. 8, p. 205.
1116. *Purple Grackle Near Philadelphia.* By Ellwood C. Erdis. *Ibid.*, Oct. 8, p. 205.
1117. *Destructive Electric Light Towers.* By G. Noble. *Ibid.*, Nov. 12, p. 305.—During a rainy night in October, 105 birds were picked up under one light tower in Savannah, Ga.
1118. *Annual Meeting of the A. O. U.* Editorial. *Ibid.*, Nov. 26, p. 342.—Short account of the third annual meeting, held in New York City, Nov. 17 and 18, 1885.
1119. *Anser Hutchinsi.* By Dr. E. Sterling. *Ibid.*, Dec. 10, p. 384.—Specimens found in the market of Cleveland, O.
1120. *Eider Duck in Michigan.* By R. B. Lawrence. *Ibid.*, Dec. 10, p. 384.—A female shot at Munroe, on Lake Erie, Nov. 12, 1885.
1121. *The A. O. U. Check List.* Editorial. *Ibid.*, Dec. 24, p. 429.—Notice of the work.
1122. *Protection of North American Birds.* Editorial. *Ibid.*, Dec. 24, p. 429.—Notice of the organization of the A. O. U. Committee on this subject, in New York City, on Dec. 12, 1885.
1123. *Arizona Quail Notes.* By Herbert Brown. *Ibid.*, Dec. 31, p. 445.—Relates chiefly to *Colinus ridgwayi*, and is an important contribution to the history of this species.
1124. *The Bailey Collection of Eggs.* Editorial. *Ibid.*, Dec. 31, p. 446.—Its sale and transference to the American Museum of Natural History in New York City.
1125. *A Swan in Massachusetts.* By T. *Ibid.*, Jan. 7, 1886, p. 466.—Record of a specimen shot at Middleboro, about Dec. 27, 1885. The name of the species is not given.
1126. *Arizona Quail.* By Robert Ridgway. *Ibid.*, Jan. 14, p. 484.—An important paper, in reply to that of Mr. Brown. (See above, No. 1123.)

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Stejneger, L. (1) On *Brachyramphus perdix* (Pall.) and its nearest allies. (Zeitsch. f. ges. Orn. 1886, pp. 210-219, pl. vii.) (2) Review of Japanese Birds. I, The Woodpeckers. (Proc. U. S. Nat. Mus., 1886, pp. 99-124, pl. ii.)

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GENERAL NOTES.

Occurrence of Cory's Shearwater (*Puffinus borealis*) and Several Species of Jaegera in Large Numbers in the Vicinity of Gayhead, Mass., during the Autumn of 1886.—In the early part of the summer of 1886, both mackerel and bluefish were very scarce near the coast of the Middle States, and it was ascertained that they were busily engaged in feeding on a small white fish, three or four inches long, occurring in immense numbers, 150 to 200 miles off the coast. This fish proves to be young sea herring (*Clupea vulgaris*). Towards the end of September this herring came inshore in large numbers, from Point Judith to Buzzard's Bay and Vineyard Sound, where they remained until the end of October, and perhaps still later. They were accompanied by mackerel of unusually large size and fatness, which furnished for many weeks an ample supply to fishing crafts of various kinds, and they were captured, for the most part, with the hook and line.

With the herring came also enormous numbers of *Puffinus* and *Stercorarius*, the former proving to be almost exclusively the *Puffinus borealis* Cory, with a few *Puffinus stricklandi*. None of the *P. major* were seen.

The *Stercorarius* consisted principally of *S. parasiticus* and *S. pomarinus*; these in every imaginable stage of coloration; some being entirely dusky and others in various grades of immaturity; very few, if any specimens in full plumage being seen.

The Shearwaters occurred in flocks of perhaps from fifty to two or three hundred, the bunches being generally found quietly resting on the water and feeding, while swimming, upon the herrings that were so abundant in the vicinity. They were very tame, but approach to them could be best made by a steam launch, which would almost run over them before they would start to fly. A dozen birds were killed by the discharge of two guns from a launch. About a hundred specimens were secured, and thousands could easily have been killed if necessary.

When last heard from, towards the beginning of November, the birds were still with the herrings, and were found very abundantly off Gay Head, Menemsha Bight, Cuttyhunk, and elsewhere, both in Vineyard Sound and Buzzard's Bay.

The Jaegers were shyer, and were generally killed singly as they flew past. They did not seem to associate closely with the Shearwaters.—
S. F. BAIRD, Washington, D. C.

Phænicopterus ruber as a South Carolina Bird.—In 'The Auk' for July, 1886, Mr. Loomis gave a short account of the capture of this species near Georgetown. As I am able to give a full account of its capture, I trust that the following will prove acceptable. Learning from my friend Dr. G. E. Manigault, that W. St. Julien Mazyck, Esq., captured the bird, I wrote to him for a full account of its capture. Mr. Mazyck very kindly wrote me, under date of November 22, as follows:—"The fall of the year 1876 was stormy, with much rain. Somewhere between the 10th and 16th of September there was a gale of wind. A day or so after the gale, Mr. B. H. Ward observed a large, strange bird on De Bardien Island, which he determined to watch and make an effort to capture. Inadvertently mentioning what he had seen, one of his neighbors the next day killed the bird, and brought it to Pawley Island, when I identified it as the Flamingo.

"That night, several hours after it was killed, I skinned such parts as I judged would be acceptable to Dr. Manigault. The legs and other long bones were badly shattered by the turkey shot, and with no experience I made a poor job of the bird. The heat and moisture of the weather softened it so much, Dr. Manigault wrote, that he could do nothing with it. He, however, identified it as a young male.

"The bird was evidently lost in the storm and driven to this shore, where he remained four or five days before being killed."—ARTHUR T. WAYNE, Charleston, S. C.

Occurrence of the Florida Gallinule at Springfield, Mass.—A Florida Gallinule (*Gallinula galeata*) was taken October 1, 1884, at a point on the Connecticut River about five miles below Springfield. The bird was first noticed in the water close to the bank, in the act of diving. I immediately went to the spot with a dog, who dashed in where the bird disappeared, when it immediately came to the surface and instantly took to wing and was shot. A companion then informed me that it was similar to a bird that he had recently taken. Early in September, 1886, I was told that a strange bird, "like a very large Rail," had been seen in the reeds in a set-back, near the mouth of the Agawam River, which enters into the Connecticut directly opposite this city. On the 14th of September, upon going to this place, I at once succeeded in getting this bird up, but in shooting missed it. It alighted about a hundred yards up the set-back, where, after some search, it arose from some tall grass within a few feet of where I stood and was killed.

Four days later (September 18th), at very nearly the same place where

the first mentioned Gallinule was shot in 1884, the dogs drove out from the reeds another, which was shot; and on the same day, a little farther down the river, and about a mile north of the Connecticut State line, I saw what at first seemed to be a Grebe swimming rapidly out into the river; upon pursuing it with a boat it arose, flying slowly and near the water, and was also killed. This made the fourth time I had been present at the capture of a Florida Gallinule in this vicinity within two years. I also think I have seen birds of this kind on other occasions when they have not been taken, and have very little doubt but that my companion was correct in his statement in 1884, that he had shot one, although there is a possibility he had mistaken a Coot for a Gallinule. They very closely resemble each other in every respect, except the feet. At all other places where these birds were first found, the bottom was very soft and there was a rank growth of wild rice, upon the seeds of which plant the birds were feeding.

—ROBERT O. MORRIS, *Springfield, Mass.*

Wilson's Phalarope (*Steganopus tricolor*) in Rhode Island.—On September 13, 1886, one of these Phalaropes, in immature plumage, was brought to me by J. Glynn, Jr., who had noticed it among some birds shot by one of the local sportsmen, and seeing that it belonged to an uncommon species had obtained it from him. I understand that when shot it was in company with two 'Creakers' (*Tringa maculata*). This is the second record of the bird's occurrence in this State.—WILLIAM C. RIVES, JR., M. D., *Newport, R. I.*

Occurrence of *Phalaropus lobatus* at Syracuse, N. Y.—September 3, 1886, an adult male Northern Phalarope was shown to me by Mr. Charles Noxon of this city, who procured it September 2 on Onondaga Lake, on the outskirts of Syracuse.

The bird, in company with another (female), which was also secured, was discovered swimming gracefully about in the middle of the lake, and both were so tame as to be shot without trouble. Two days after (September 4) another specimen, a male, was shot in the same locality by Mr. E. M. Hasbrouk; on September 25, following, another was seen, but not procured. Previous to this the Northern Phalarope has been recorded but once in this County.—MORRIS M. GREEN, *Syracuse, N. Y.*

A Fern-eating Woodcock.—One of the most singular departures of birds from their ordinary food-habits that I have ever observed is the following: In examining the digestive organs of more than one hundred Woodcocks, I think I have never found in them anything but the common earth-worm, either entire or in various stages of digestion, excepting in one or two instances, a leech (*Hirudo medicinalis*).

The Woodcock in question was brought to me to be mounted by Mr. W. C. Alvord, of Washington, D. C., who shot it while Woodcock shooting at Martha's Vineyard. This bird was one of several killed on the 17th of October, 1885. When skinning it my attention was called to its very

singularly distended crop. Upon making a cut into the membrane with a pair of scissors, out rolled, or rather jumped, the contents, which being released from confinement increased to three times its former size. At the same moment I was astonished to observe the character of the contents, which proved to be leaves of the common fern (*Pteris aquilina*), rolled up in so curious a manner, and in such quantity, as to plainly indicate that it was the result of a deliberate meal, and not an accident.

The crop was so full as to be incapable of holding any additional material. No other substance was mixed with the leaves, the entire wad or ball being free from dirt of any character. Every leaflet of the fronds was intact, and after being soaked in warm water and spread out side by side they covered a space twelve inches square. The stomach and intestines appeared to contain parts of partly digested leaves, but nothing else, though this was not carefully determined.

A 'Fern-eating Woodcock' is a novelty in my experience. Drs. Merriam and Fisher have desired me to send this record for publication to 'The Auk.' This is one of the most singular instances noted, not excepting even the record of the presence of an entire Song Sparrow in the crop of a Chuck-wills-widow.

It may be mentioned that the locality where this Woodcock was shot was an open marsh, with bushes here and there, while springs and small streams afforded in abundance the usual food of this very fastidious bird. The specimen was in fine condition—a plump and fat old female.—
FREDERIC S. WEBSTER, Washington, D. C.

A Further Note on *Colinus ridgwayi*.—I have recently received a letter from Mr. Herbert Brown, calling my attention to an error in my recent paper on this species (Bull. Am. Mus. Nat. Hist., I, No. 7, 1886, pp. 273 and 275, footnotes), in which the pair of Quails referred to as seen by Mr. Stephens are said to be the fragments sent to Mr. Ridgway and now in the National Museum. It proves they were not these specimens, but a "fairly good pair," which was later sent by Mr. Brown to Mr. Henshaw, and through the latter's kindness now before me. This adds two to the list of specimens known to be extant, raising the number to 21. The male presents the average characters shown by the series previously examined; the female is darker than the average for that sex, being in fact much the darkest of the series thus far seen, the bars, both the black and the white ones, being much stronger both above and below, and the tones of color much brighter and stronger throughout. It is thus an almost exact counterpart of the more strongly colored females of *Colinus graysoni*.

This proves to be the pair of birds referred to by Mr. Brown in one of his 'Forest and Stream' articles (Vol. XXV, No. 25, Jan. 14, 1886, p. 445), as having been seen by Mr. F. Stephens, W. E. D. Scott, E. W. Nelson, and H. W. Henshaw. Mr. Henshaw informs me that he had entirely forgotten having these birds in his possession until I spoke to him of them after receiving Mr. Brown's letter, as mentioned above. Had he recalled the fact of his having them at the time he heard I was at work on a paper on

this species, he says he should have certainly sent them to me then for examination.

Mr. Brown has also sent to me, since the publication of my paper, the head and neck of an adult male, killed July 19, 1886, in the Barboquivari Mountains. The specimen, when received by Mr. Brown, was too far gone to make a good skin, but being remarkable for its whiteness he saved the head, which is now before me. A broad white superciliary stripe runs from the nostrils on each side of the head to the nape, meeting on the forehead. There is a conspicuous white maxillary patch, and the anterior part of the throat is white, with more or less white mixed with the black over the remainder of the throat. The superciliary stripes are as broad and as well defined as in *C. graysoni*, and on the throat there is nearly as much white as black. The specimen, therefore, very nearly agrees with the form known as *C. graysoni*—much more nearly than any other previously examined, or than with typical *C. ridgwayi*—and goes far toward bridging the slight gap between these two forms. This is particularly interesting, from the fact that this specimen is not only from Arizona, but from the same locality as the others obtained by Mr. Brown.

Mr. Brown writes to me that he will soon renew his investigation of the habits of this species, in the hope of securing its nest and eggs. One of his collectors found a nest last year, containing eight eggs, but his collector delayed taking them, in the expectation that more would be laid; but on visiting the nest again he found that the eggs had hatched, and the prize was thus lost.—J. A. ALLEN, *Am. Mus. Nat. Hist., New York City.*

The Golden Eagle in Eastern Massachusetts.—Two Massachusetts specimens of the Golden Eagle (*Aquila chrysaëtos*) have recently come into my possession. The first, a female, was killed in Paxton (Worcester Co.), Oct. 22, 1883; the second, a male, in Lynnfield, Nov. 23, 1886.—WILLIAM BREWSTER, *Cambridge, Mass.*

The Black Gyrfalcon (*Falco rusticolus obsoletus*) in Eastern Maine.—Mr. F. B. Webster has just sold me a typical example (♀) of this fine Falcon which came to him in the flesh from a gunner at Rockland, Maine. It was received Nov. 26, 1866, and judging from appearances, had been killed about a week or ten days previous to this date.—WILLIAM BREWSTER, *Cambridge, Mass.*

A Singularly Marked Specimen of *Sphyrapicus thyroideus*.—A very singularly marked adult male of this species was sometime since kindly sent to me for examination by Mr. C. A. Allen, of Nicasio, California. It was shot in Blue Cañon, California, Oct. 9, 1878, and another like it was said to have been seen in the same locality. This specimen differs from the ordinary adult male of this species in having a large patch of crimson-scarlet on the crown, about half an inch broad, and commencing about .15 of an inch from the base of the culmen; anteriorly, this red patch has a quite regular transverse outline, but posteriorly the red feathers become

scattered so that on that portion the patch is broken and irregular. This red crown-patch is very similar to that adorning the adult male of *Centurus uropygialis*, but is rather larger, extends further forward on the crown, and is more scarlet in color. On the throat, the usual red stripe is extended posteriorly very nearly to the yellow of the abdomen; back of its usual limits, however, the red becomes gradually duller, until it finally changes to a dull brownish hue. This red throat-patch also gradually widens posteriorly to near its extremity, being at the widest part more than half an inch broad. In all other respects the plumage of the bird is quite normal. The interscapulars are largely white centrally, each feather having a conspicuous longitudinal, broad, white stripe, but these white markings are almost entirely concealed when the feathers occupy their natural position; sometimes these white markings are, however, observable in specimens having the red of normal development. The belly is rather pale for Californian examples of this species, which are usually much brighter colored beneath than those from the interior. There is, however, much variation in this respect. The measurements are as follows: wing, 5.50; tail 3.80; culmen, 1.05; tarsus, .85.—R. RIDGWAY, *Washington, D. C.*

On an Addition to the Ornithology of South Carolina.—Toward the close of the afternoon of Dec. 9, 1886, a small flock of over a dozen Blackbirds, accompanied by a straggling company of Meadowlarks, was noticed on a barren field in the suburbs of Chester. At the distance, they appeared to be Purple Grackles. Hoping to find an example of *aeneus* among them, I went in pursuit, but, as the 'Larks' were inclined to linger behind, I had considerable difficulty in getting within shooting distance. After a time, however, I succeeded in temporarily separating them, driving the Blackbirds into a tree. Three specimens were secured, but of a kind wholly unexpected—not Bronzed, but Brewer's Blackbirds (*Scolecophagus cyancephalus*). On the following morning two additional examples were captured, making a total of three males and two females. That these birds were waifs and strays, mere accidentals, seems improbable. Their numbers and condition (those taken were very fat), considered in connection with the demonstrated tendency of certain species of the West to extend their migrations to the South Atlantic States, appear to indicate that they were irregular migrants, borne eastward on the cold wave which struck Chester on the night of December 3, covering the ground for a week with snow.

To what extent the list of South Carolinian birds is capable of expansion can only be conjectured. The experiences of the past few years have taught us to expect almost any migratory bird inhabiting the Mississippi Valley. If we are ever to arrive at a 'Complete Catalogue,' if such a thing be attainable, it will only be through persistent use of the gun, and by careful and systematic examination of many specimens of every species having a western sub-specific representative.—LEVERETT M. LOOMIS, *Chester, S. C.*

Occurrence of *Calcarius ornatus* in Maine.—Early on the morning of August 13, 1886, while sitting in a blind on the Little River marshes, near Pine Point, Me., I noticed a small bird flying restlessly about overhead. From its peculiar flight and notes I took it to be a Titlark. Rather surprised to see one so early in the season, I watched it carefully, and, when it finally alighted not far away, I went after it. My attempt to secure it was unsuccessful, however, owing to my gun missing fire, and it flew off to the other side of the river, where I lost sight of it. Several hours later, while returning by the same place, I saw what was presumably the same bird, flying about from one place to another. Finally I fired at it, as it rose from the grass before me, and had the pleasure of seeing it fall. I must confess that on picking it up I was completely at a loss to know what it was. I did not feel sure regarding it till several months later, when looking over one day, in company with Mr. Chadbourne, the large series of *Calcarius ornatus* in the Agassiz Museum at Cambridge, we discovered one specimen which matched my bird in every particular. Mr. Brewster, to whom I showed it later, identified it as *ornatus* without doubt. The bird is of very small size, and, as far as plumage goes, lacks, with the exception of the tail-markings, every sign of belonging to this species. It is apparently a young male, though the sex could not positively be determined.—JOSEPH L. GOODALE, Cambridge, Mass.

Object of the Shrike in Impaling its Prey.—I see that in Coues's 'Key to North American Birds' it is said to be still a puzzle to know what the Shrike intends by sticking insects and small animals on thorns. The explanation seems easy enough to me, and I give it for what it is worth. The Shrike, like many other birds and animals of prey, seems inclined to kill as long as there is opportunity, regardless of being able to use. The Shrike, not being fitted in claws or beak for tearing, as Hawks are, I think fixes its prey on thorns for the purpose of giving it a greater purchase in tearing it to pieces. I have been watching them often lately along the line of the railroad where they make use of the barbs on the wire fences for impaling the large grasshoppers they seem mostly to feed on. I often see them catch three or four in succession, but I think they rarely use more than one, and grasshoppers being so plentiful at this season I do not think that Shrikes ever come back to them, though they may do so in winter.—JAMES WHYTE, Houston, Texas.

Additional Occurrences of the Connecticut Warbler in Maine.—On seeing Mr. Merrill's note in the July number of 'The Auk' (Vol. III, p. 413) last summer, on the status of the Connecticut Warbler in Maine, I was reminded of a bird which I had taken in September, 1885, at Saco, which I had supposed to be of this species. At the time of reading the note I was away from Cambridge, and, being unwilling to send any communication regarding my bird until I had examined it again, was obliged to wait until October. Before that time, however, I had the pleasure of taking two more specimens at Saco. The first was taken September 8,

in a maple swamp, not more than twenty yards from where the specimen of the previous year was secured. The other was shot September 15, in a dry blueberry heath, on a pine tree, where it seemed to be feeding. To make certain in regard to their identity I have just shown the three skins to Mr. Brewster, who pronounces them undoubted *Oporornis agilis*. —JOSEPH L. GOODALE, Cambridge, Mass.

The Brown Thrush laying in the Nest of the Wood Thrush. — As the present season has proved to be prolific in birds laying large sets of eggs, I was induced to look into a nest of a Wood Thrush, from which the female was with difficulty driven off, when, in addition to her own clutch of four eggs I was very much surprised to see two typical eggs of the Brown Thrush, which, I believe, is the first record of the kind. The nest was placed in a maple, about three feet from the ground, in a quite thick ravine very seldom frequented; so this occurrence cannot be placed to the pranks of some boy. Again, the Brown Thrush is not common in this vicinity, and its nest is quite a rarity, so that any boy of 'birds-eggs-collecting proclivities' would have been more apt to keep the eggs than to place them in another nest, which might not have been the case had the species been a Robin, Catbird, or some common bird. Near the spot where this nest was found a Brown Thrush was heard singing, but all efforts to find its nest were fruitless. The eggs of the Wood Thrush proved to have been incubated about seven days; those of the Brown Thrush not over two or three days. This unique set was taken June 5, 1886, and is now in the collection of the American Museum of Natural History, New York.—H. B. BAILEY, South Orange, N. J.

Capture of Three Rare Birds near Hartford, Conn. — *Ardea egretta*.
AMERICAN EGRET. — A bird (sex unknown) of this species was shot in this vicinity Aug. 14, 1883. Two or three more were reported seen near here in the same month, but I can vouch for the authenticity of only the one mentioned above.

Charadrius dominicus. **AMERICAN GOLDEN PLOVER.** — I have a young male of this species in my collection which was shot Oct. 24, 1885, as it was flushed from a stubble field in this locality. The bird was alone, and in skinning it I found that it was in good condition.

Phalaropus lobatus. **NORTHERN PHALAROPE.** — I shot a female about a mile below Hartford, Sept. 27, 1886. It appeared quite tame and was flushed from the water with considerable difficulty. The plumage was perfect but on dissection it proved to be in very lean condition.—WILLARD E. TREAT, East Hartford, Conn.

Piranga rubriceps and Tringa fuscicollis in California. — I have just received a specimen of *Piranga rubriceps* from Mr. W. G. Blunt, of San Francisco, which he shot at Dos Pueblos, Santa Barbara Co., Cal., and mounted at the time, which was about 1871, he thinks. The bird has not since been out of his possession. It was alone when shot.

Mr. Blunt assures me that there is positively no doubt of the fact.

In looking at a case of his birds this specimen at once attracted my attention as a strange looking Tanager, different from any I remembered to have seen, and on inquiry I learned its history, as above given.

As far as I can learn this is a bird new to California, and also to the United States. If so it seems worthy of record. (No. 2697, ♂, Coll. of W. E. B.)

In 1884 I took east with me a specimen of *Tringa fuscicollis*; it was so named by some good authority, Mr. Ridgway I think. By the A. O. U. Check List it appears that it has not been found in California. It was a solitary individual, shot by myself on the marsh near Oakland, Cal. No. 1080, ♀, Oct. 8, 1883. Iris dark brown, feet and legs yellow. Coll. of W. E. B.—WALTER E. BRYANT, *Oakland, Cal.*

CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

Scarcity of Adult Birds in Autumn.

TO THE EDITORS OF THE AUK:—

Sirs: Between the first of September and the twenty-second of November of this year I collected 367 bird skins; 258 during the month of October in Colorado, and the remainder in Kentucky. Of this aggregate of 367, 348 were birds of the year. The question at once presents itself, whence this glaring discrepancy? Where were the adult birds? I made no effort to secure young birds (in nine cases out of ten the young fall bird is indistinguishable from the adults by external characters), but 'took them as they came.' It may be asked how I determined the birds in question to be 'birds of the year.' For several years I have noted that nearly all the birds shot by me in the fall had skulls that were more or less incompletely ossified, and in 1885 I began to systematically examine the skulls and other skeletal parts with the view of determining the relative age of the birds, assuming that those individuals exhibiting a soft or incompletely ossified skull, must have been hatched during the immediately preceding breeding season.

Of the nineteen adult birds collected between the dates above given, eleven of them were species resident where collected.

Apparently the only legitimate inference from the above facts is, assuming my method of determining the relative age of birds correct, that the adults migrate as soon as they are relieved of the care of the young birds, and that the latter form the great bulk of the autumnal migration stream. Opposed to this theory we have the *negative* evidence that ex-

tremely few adult 'transients' are recorded as observed in July and August. Are there not some members of the A. O. U. who can throw light upon the subject?

Respectfully yours,

CHARLES WICKLIFFE BECKHAM.

Bardstown, Ky., Nov. 23, 1886.

Classification of the Macrochires.

TO THE EDITORS OF THE AUK:—

Sirs:—Once more I must ask your indulgence in the matter of a little space, as I have a word or two to say in regard to Mr. Lucas's paper on 'The Affinities of Chætura' which appeared in the last number of this journal (Oct., 1886), and from the reading of which I find that I have on my hands another ornithologist who takes exception to the further separation of the Cypseli and Trochili, more than is now generally agreed to by the majority, perhaps, of systematists in their schemes of classification.

It is not my intention on the present occasion either to add or subtract anything to what I have already contributed to the morphology of the Macrochires, for by so doing I would forestall the conclusions of my further researches in this matter that I now have in hand.

Mr. Lucas says, "Nevertheless, until still more evidence to the contrary is adduced, I will hold fast to Huxley's union of Hummingbirds and Swifts" (p. 444).

Now at the present writing I have been over two years in a position where I have not been able to avail myself of either the libraries or the museums, and have at my command but a limited working field library; so that it is quite possible that Professor Huxley may have recently changed his views in regard to the taxonomy of the Macrochires, and I not have known of it. But, I do know that in 1867 he wrote the following sentences, to wit: "In their cranial characters, the Swifts are far more closely allied with the Swallows than with any of the Desmognathous birds, the Swift presenting but a very slight modification of the true Passerine type exhibited by the Swallow. No distinction can be based upon the proportions of the regions of the fore limb; since in all the Swallows which I have examined [*H. pacifica*, *H. riparia*, *H. rustica*, and *H. urbica*], the manus and antibrachium respectively, greatly exceed the humerus in length, though the excess is not so great as in *Cypselus*" (P. Z. S., Apr. 1867, p. 456). And again in the same paper he says "The *Cypselidae* are very closely related to the Swallows among the Coracomorphæ" (p. 469). Mark you, Professor Huxley here says "very closely related." In other words, at the time that this eminent biologist formulated his 'Classification of Birds' in the memoir in question, he evidently believed that Swifts were but profoundly modified Swallows. Believing this as he did, I am the more

surprised that he, in the same paper, said, "This group [Cypselomorphæ] contains three very distinct families—the *Trochilidae*, the *Cypselidae*, and the *Caprimulgidae*" (p. 469). It is hard to say what Professor Huxley's views in the premises would be now, as I am inclined to think he has in no way modified them in print since 1867, and that is quite a long time ago.

For one, I do not place the reliance upon the structure of the bony palate in birds as a taxonomic character that Huxley did then, and a number of classifiers have done since. It rather dilutes its importance to find such a bird as *Caprimulgus europaeus* with its maxillo-palatines well separated in the median line, while another Caprimulgine bird, as *Chordeiles acutipennis texensis*, for example, has these processes meet each other for a considerable distance in this locality, where they may even in old individuals fuse together (compare Huxley's figure of the former type and mine of the latter).

Some of the most interesting parts of Mr. Lucas's article are to be found in the foot-notes. For instance, in one of these (p. 446) he says, "In Dr. Shufeldt's figures of *Panyptila* and *Tachycineta* the maxillo-palatines are imperfect." From a reading of the article, I am rather inclined to think that Mr. Lucas, at the time he penned this opinion, had skeletons of neither of these birds before him; indeed, I do not think there was a single alcoholic of either of these forms in the Collection of the Smithsonian Institution at the time, and there are just a few of these birds about me here in New Mexico! At any rate, these two figures are exactly double the size of life; are based upon careful comparisons of abundant material of the kind in question; and are absolutely correct in every particular.

Still keeping clear of some dubious anatomical deductions in my critic's paper we find another foot-note at the bottom of page 447, wherein he says: "Among birds the characters afforded by the sternum are so important that I must confess myself a little surprised that Dr. Shufeldt should so readily reject them." Let me say here, in explanation of this, that my studies of the skeletons of the Auks shook my faith a little in the value of the character of the xiphoidal extremity of the sternum, and the 'notching' it may assume.

The Smithsonian Institution has had in its hands for two years now, for publication, an extensive work of mine, treating largely of the osteology of American birds, and illustrated by over 400 figures. When this work appears Mr. Lucas will find that I describe two sterna théré, from two individuals of the *same species* of Auk, wherein one is extensively notched on either side of its posterior end, while the other is absolutely entire, and no evidence of a notch there at all. In the same place I have endeavored to show how this may come about, but no more of it here, for I hope the volume I have just referred to will be published, and then my views on this question will be better understood. As it stands now the work has proved too extensive for the slender means of the National Museum to handle at one effort.

Of course, in recording what I have just done in the preceding para-

graph, I by no means wish it to be understood that I in any way under-rate the significance of the 'notching' of the xiphoidal end of the sternum, in the *vast majority* of the class Aves.

One is both surprised and refreshed at the information conveyed in the last foot-note of Mr. Lucas's paper (p. 451);—surprised from the fact that the osteologist-in-chief of our great Government Museum at Washington should be, up to the time of his writing the article he contributed to 'The Auk,' ignorant of the opinions Dr. Parker has so ably presented us with in his matchless "treatise on the Skull of *Ægithognathous Birds*"; and refreshed to think that that institution can lay claim to a mind among its admirable staff of workers, in which it is evidently possible for opinions to evolve, *de novo*, which compare so favorably with those held by living masters in morphology.

Very respectfully,

R. W. SHUFELDT.

Fort Wingate, N. Mex., 16th November, 1886.

NOTES AND NEWS.

AT the recent meeting of the American Ornithologists' Union in Washington, during the discussion of the subject of bird protection, Mr. F. S. Webster spoke of the attitude of the members of the Union toward taxidermists, which seemed, he thought, one of enmity rather than of friendship. Mr. Brewster, in replying, said he was glad the matter had been brought up, as it was evident that there was a serious misapprehension of this subject on the part of taxidermists. He stated that honest taxidermists as a class were respected by ornithologists, who looked upon them as efficient and indispensable allies, and that the prevalent impression to the contrary was the outgrowth of malicious remarks by certain enemies of the Union. Mr. Brewster believed in encouraging true taxidermy, and in granting collecting permits to all honest taxidermists. What ornithologists wished to prevent was the wholesale traffic in birds for commercial purposes by men who had no claim to be ranked as taxidermists, though they so styled themselves. It was only the abuse of the privilege of collecting that ornithologists were striving to prevent.

Mr. Webster replied that the reason taxidermists felt aggrieved was the wording of the law proposed by the A. O. U. Committee on Bird Protection, which was such as to practically prohibit even legitimate taxidermy. He would be glad to see the Union take a stand in the matter that would remove the existing feeling of antagonism between ornithologists and taxidermists.

The President being then called upon to express his views on the matter in question, stated that the proposed law was not intended to cripple

legitimate taxidermy, but mainly and primarily to prevent destruction of birds for millinery purposes. Conscientious, honest taxidermists, would have no difficulty in obtaining permits to collect birds for scientific or other legitimate purposes under the proposed law. It was certainly not the intention of the committee to in any way impede or prohibit the legitimate work of the taxidermist. He spoke in high praise of their services to ornithology. He was sure no feeling of antagonism on the part of the Union toward taxidermists as a class existed, but only against certain obnoxious persons, who had rendered themselves so by their wholesale slaughter of birds for gain, and who were not taxidermists in any true sense. He had found taxidermists, as a rule, to have too much of the spirit of the naturalist to be willing to become caterers to the milliner.

AT the meeting of the Ridgway Ornithological Club held August 12, 1886, the following papers were read: 'Spring Notes from Cook and Lake Counties, Ill., and Lake Co., Ind.', by Geo. L. Toppin; 'The Future of American Ornithology,' by R. W. Shufeldt. A number of donations of bird skins, and eggs, and of ornithological literature, from Resident and Corresponding members were announced. At the meeting held September 9, 1886, Mr. J. G. Parker, Jr., read a paper on the 'Ornithology of Sauk and Columbia Counties, Wis.', which he illustrated with skins of the rarer species observed. At the meeting of October 14, 1886, Mr. H. K. Coale read a paper by Mr. Robert Ridgway entitled, 'List of the Birds found breeding within the corporate limits of Mount Carmel, Ill.' The subject of publishing the proceedings of the Club was discussed and favorably considered, and will be definitely decided at the next meeting.

AT a meeting of the California Academy of Sciences, held November 1, 1886, a paper was read by Mr. Walter Bryant on the 'Ornithology of Guadalupe Island,' embodying the results of Mr. Bryant's ornithological work during several months spent at this interesting locality. The paper will soon be published in the Society's 'Bulletin.'

THE A. O. U. Committee on Bird Protection published its second 'Bulletin' on November 11, 1886, in 'Forest and Stream.' It was immediately issued separately as an eight-page pamphlet, uniform in size and style with its 'Bulletin No. 1.' The present 'Bulletin' is devoted to 'Bird Protection by Legislation,' and is especially intended for distribution among the legislators of the different States, in the interest of securing better and more nearly uniform legislation for the protection of birds. It contains the recently enacted New York State law on this subject—essentially the same as the law drafted by the A. O. U. Committee and published in its first 'Bulletin'—with extended explanatory comment respecting the intent and scope of its leading provisions, some of which, owing to obscure phraseology, had been fallaciously interpreted. This is followed by a new draft by the Committee, amending in a few particulars their former one, with which, however, it agrees in all essential features. The age qualification of the former draft, and of the New York law, in refer-

ence to applicants for collecting permits is omitted, the other restrictions being deemed sufficient to prevent the granting of permits to persons not properly entitled to receive them. The penalties for the infringement of the law are increased, and one-half of the fines imposed for infringement of the act are awarded to the informant or prosecutor. Accompanying the draft are suggestions in relation to the manner of securing the enforcement of such laws. The 'Bulletin' also contains an abstract of the report of the Committee to the American Ornithologists' Union, some account of the work of the Audubon Society, and other matter relating to the general subject of the Committee's work.

The Committee having been continued by vote of the Union, and its report for last year accepted with thanks, its work will be carried on with vigor through the coming year, to facilitate which the Committee will probably increase its membership.

MR. M. ABBOTT FRAZAR is on his way to Lower California where he will spend an indefinite period collecting birds and eggs of the region for Mr. William Brewster. It is Mr. Brewster's intention to have the entire peninsula, with its neighboring islands, thoroughly explored by Mr. Frazar.

MR. HERBERT H. SMITH has recently returned from Brazil with large collections of natural history specimens, accumulated during five and a half years devoted to collecting in the interior of Brazil. Although Mr. Smith gave his attention especially to insects, of which he brought home some 400,000 specimens, he made collections of much importance in other departments of natural history. His collection of birds, numbering about 450 species and 7000 specimens, was made chiefly in the Province of Matto Grosso, on the headwaters of the Paraguay River, a region hitherto little explored. It is doubtless the largest collection ever brought by one person from so limited an area in South America; and besides throwing much light on the ornithology of this particular district, it must contain some novelties. Mr. Smith's collections are now at the American Museum of Natural History, New York, where, it is to be hoped, a large part of them will permanently remain. The birds have been placed in the hands of Mr. J. A. Allen for study and determination, who will in due time publish an annotated list of the species.

MR. WILLIAM BREWSTER is about to build a small private museum on his place at Cambridge. It will be of brick and thoroughly fire-proof. It will be arranged to accommodate a large collection of bird skins, nests and eggs, with limited case room, also, for mounted specimens.

MR. CHARLES H. TOWNSEND has just sailed for Yucatan and, under the auspices of the U. S. Fish Commission, will spent several months in natural history work in that country and some of its neighboring islands, devoting a considerable portion of his time to ornithology.